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5.5 BIOLOGICAL RESOURCES

The Salton Sea Unit 6 (SSU6) Project is located in Imperial County south of the Salton Sea (refer to Figure 3.1-1). Agriculture, geothermal power production, and wildlife habitat associated with the Sonny Bono Salton Sea National Wildlife Refuge (the Refuge) are the primary land uses in this portion of the Imperial Valley. The Refuge Headquarters is located approximately 2,500 feet from the nearest well pad (Production Well Pad OB1). The proposed plant site and associated production and injection wells occur in agricultural fields adjacent the southeastern shore of the Salton Sea near Obsidian Butte. Besides active agricultural fields, habitat in the Obsidian Butte study area includes scattered disturbed and developed areas, two freshwater marshes dominated by cattails (*Typha* spp.) in the area nearest the Refuge and Obsidian Butte, riparian habitat that is limited to the New River crossing on Lack Road, saltbush scrub, creosote bush scrub, and desert sink scrub.

The study area includes each of the SSU6 Project facilities plus the area within 1 mile of the plant site and the areas within 1,000 feet of the linear facilities. Evaluation of the study area included the use of existing databases and direct field surveys in 2001 and 2002 to ensure an accurate assessment of potential impacts on biological resources as discussed below.

Section 5.5.1 describes the affected environment relative to biological resources. It includes a description of the overall environmental setting for biological resources. More detailed information is provided in Section 5.5.1 for plant communities, wildlife, economically important species, special environmental areas, and sensitive species, respectively. Environmental databases and survey methods are described therein. Section 5.5.2 describes potential environmental consequences of the proposed project, followed by a discussion of cumulative impacts in Section 5.5.3, proposed mitigation measures in Section 5.5.4, Laws, Ordinances, Regulations, and Standards in Section 5.5.5 and references in Section 5.5.6. Tables and figures are found at the end of this section.

This section summarizes information provided in the Wetland Delineation Report and Biological Assessment, prepared by URS Corporation in 2002 (found in Appendix K). The Biological Assessment includes technical information used in support of preparing this section; lists personnel who performed field surveys, and the times of those surveys; the results of the search of the California Natural Diversity Database (CNDDB) for the project area; and copies of forms prepared for submittal to the CNDDB that document sensitive resources observed in the study area.

Both the CEC and the United States Army Corps of Engineers (Corps) require preparation of a Biological Resources Mitigation and Implementation Monitoring Plan (BRMIMP) report, which is in process. The BRMIMP is a detailed guidance document for all biological mitigation. Section 5.5.4 describes mitigation measures that are also described in the Biological Assessment and that also will be included in the BRMIMP.

5.5.1 Affected Environment

5.5.1.1 Plant Communities

There are four native vegetation communities and three nonnative communities within the study area. In addition, the study area includes developed lands that do not support habitat for native plant or animal species. Native vegetation communities include creosote bush scrub, desert sink scrub, freshwater marsh, and disturbed riparian scrub. The classification of vegetation used in this study is based on a modified Holland system (San Diego Association of Governments [SANDAG], 1996), in which the original Holland classification system (Holland, 1986) has been tailored to incorporate local variation.

The majority of the plant compositions in the study area are not climax plant communities; therefore, many of the names for the mapped vegetation units are not consistent in species composition with the published descriptions. Most of the plant communities potentially affected by the project had vegetation cover dominated by senescent or active exotic grasses and weeds. This vegetation element is omnipresent in the project area growing under, co-dominant with, or replacing the native cover species.

Where the Holland classification was ambiguous, the most prominent or regularly distributed native species were used to classify the mapped vegetation into the best-fitting Holland type. This method was chosen to recognize plant compositions with regularly occurring and recovering native cover species.

Focused surveys for sensitive plant species were conducted in March and April 2001, and April 2002. The patches of vegetation in the IID irrigation canal system and adjacent to developed areas with potential to support sensitive plant species were accessed by vehicle and then thoroughly surveyed on foot. The southwestern portion of the L-Line Interconnection that crosses undeveloped habitat was surveyed on foot by walking transects within the area of potential effect and all areas of this line were visible from the survey routes. All representative habitats within the study area were visited, and observed plants were identified and recorded. Survey dates, conditions and associated information are described in Table 5.5-1. Vegetation was mapped in the field on a scaled (1" = 400') aerial photo of the site and transferred into AutoCAD and GIS. The CNDDB and California Native Plant Society (CNPS) database were also reviewed to aid the surveys. Table 5.5-1B lists sensitive plant species potentially occurring within the study area.

5.5.1.1.1 Plants

Plant species are designated as sensitive because of their overall rarity, endangerment, unique habitat requirements, and/or restricted distribution. In general, it is a combination of these factors that leads to a sensitivity designation. Sensitive plants include those listed by the United States Fish and Wildlife Service (USFWS, 1990), California Department of Fish and Game (CDFG, 1990), and CNPS (Tibor, 2001). Species that are federally or state-listed are afforded a degree of protection that entails a review and/or permitting process, including specific mitigation measures for any allowable impacts to the species. Species that are proposed to be listed by the USFWS are treated similarly to listed species by that agency; recommendations of the USFWS, however, are advisory rather than mandatory in the case of proposed species.

The CNPS listing is sanctioned by the CDFG and essentially serves as its list of "candidate" species for Threatened or Endangered status. All of the plants on CNPS lists 1B and 2 meet the definitions of Section 1901, Chapter 10 (Native Plant Protection Act) or Sections 2062 and 2067 (California Endangered Species Act) of the CDFG Code, and are eligible for state listing (Tibor, 2001). Plant species on CNPS List 4 are those plants of limited distribution or are infrequent throughout a broader area in California. These plants are not "rare" but are uncommon enough that their status should be monitored.

The potential for sensitive plants to occur is very low due to the extremely disturbed condition of most of the study area. The desert scrub within the study area is low quality (disturbed in many areas), sensitive plants were not observed, and the potential for their occurrence is also very low. A query of the CNDDB for USGS 7.5' quadrangles in the project area reveals only one sensitive plant, Peirson's milk-vetch (*Astragalus magdalenae* var. *peirsonii*; federally threatened). Peirson's milkvetch is a perennial herb that inhabits desert dunes and typically blooms December through April. The single reported occurrence (1986) within the vicinity of the proposed project was observed approximately 2 miles from the project's terminus at Highway 86. The potential for this plant to occur within or near the project area is very low due to the lack of appropriate sand dune habitat. The agricultural portion of the project area lacks suitable habitat. The creosote bush scrub in the western portion of the project area lacks fine, loose, dune-forming sand. Focused plant surveys of this area in 2001 and 2002 revealed soils that are a matrix of tightly woven sands and sandstone cobbles (Photographs 23 and 24). Conditions in this area do not promote the development of suitable habitat for Peirson's milkvetch such as the accumulation of windblown sand along washes and at the base of shrubs.

5.5.1.1.2 General Habitat

The general habitat types in the study area are shown on Figures 5.5-1 to 5.5-5 and are described as follows:

Creosote Bush Scrub communities typically consist of widely spaced individuals of creosote bush (*Larrea tridentata*), brittlebush (*Ambrosia dumosa*), saltbushes (*Atriplex* spp.) and associated cacti (*Opuntia* spp.) with a sparse annual herbaceous layer. The creosote bush scrub within the project area consists of a very low cover of shrubs and herbaceous plants compared to many creosote bush scrub areas throughout the Mojave and Sonoran Deserts. Evidence of disturbance is obvious in some areas and the soil salinity is likely very high from the heavy salt loads that are carried and deposited by the Colorado River. These factors probably contribute to the low plant cover and diversity (Photograph 1).

Desert Sink Scrub communities typically consist of widely spaced plants on poorly drained, high alkalinity soils. The desert sink scrub in the study area consists of iodine bush (*Allenrolfea virginica*), sea-blite (*Suaeda moquinii*), and desert holly (*Atriplex hymenelytra*). This habitat is present near the limits of grading of proposed Production Well Pads OB2 and OB3.

Freshwater Marsh communities are typically dominated by cattails (*Typha* spp.) and/or other emergent vegetation (*Scirpus* spp., *Carex* spp.). The freshwater marsh within the project area is dominated by cattails (*Typha latifolia*) and common reed (*Phragmites australis*).

Disturbed Riparian Scrub communities vary from a dense, broad-leafed, winter-deciduous association dominated by several species such as willow (*Salix* spp.) and mulefat (*Baccharis salicifolia*) to a monotypic scrub dominated by salt cedar (also known as tamarisk: *Tamarix* sp.). The disturbed riparian scrub in the project vicinity occurs in patches along many of the agricultural drainages that convey water from the Alamo and New Rivers along the road network to the fields. The composition and density of the disturbed riparian scrub differs slightly in the ditches, but typically consists of tamarisk, arrowweed (*Pluchea sericea*), common reed (*Phragmites australis*), and saltgrass (*Distichlis spicata*) (Photograph 2). The project area also supports small patches of monotypic scrub communities of tamarisk, arrowweed, and common reed.

Agricultural areas dominate the study area. The Imperial Valley is one of the most productive agricultural regions in the world. The active agricultural lands within the study area support row crops such as alfalfa, lettuce, carrots, sugar beets, broccoli, and numerous others (Photograph 3). Several fields within the study area support cattle, have been recently disked for immediate planting, or are fallow. The fallow lands will most likely be cultivated again and will not succeed to a disturbed community such as non-native grassland.

Disturbed habitat is any land on which the native vegetation has been significantly altered by agriculture, construction, or other land-clearing activities, and the species composition and site conditions are not characteristic of the disturbed phase of one of the plant associations within the study region. Such habitat is dominated by nonnative annual and perennial broad-leaved species. The disturbed habitat within the study area can be found along roads and areas that have been cleared, but are not under cultivation.

Developed land supports no native vegetation and often contains man-made structures such as buildings or roads. These areas include industrial and commercial buildings as well as residences. Recently cleared and graded areas that are associated with development are also included in this category.

5.5.1.1.3 SSU6 Power Plant Site, Substation, and Construction Parking/Staging

The 80-acre power plant site, substation, and construction parking/staging area will be located within the 160-acre parcel bounded by McKendry Road to the north, Severe Road to the west, Peterson Road to the south, and Boyle Road to the east (Figure 5.5-1A and Photograph 4). Agriculture, agricultural ditches supporting patches of disturbed riparian scrub, and gravel roads surround this location, and approximately 1,000 feet to the west is an open water/riparian scrub area that connects to the Salton Sea by a series of channels. Two intersecting, 20-foot-high gravel roads (berms) separate this marsh from the proposed plant site. There were no sensitive plant species identified on or near the site. The on-going cultivation of the agricultural fields and use of the access roads precludes the development of habitat suitable to support sensitive plant species.

5.5.1.1.4 Transmission Lines

L-Line Interconnection

The proposed interconnection of the facility to the Imperial Irrigation District's (IID) existing transmission system is via a new substation south of McKendry Road and east of Severe Road. A 16-mile, double-circuit transmission line would be built to the south to connect the new substation to the existing El Centro and Avenue 58 substations via the existing L-Line. Figures 5.5-1A through 5.5-1E display the biological resources associated with this route.

The habitat along Lack and Bannister roads consists of agriculture and associated canals, developed-residential, and a strip of riparian habitat dominated by tamarisk (*Tamarix* spp.) where the New River crosses Lack Road (Photograph 5). Agricultural drainage channels follow Lack and Bannister roads and consist of disturbed, ruderal vegetation, such as mustard (*Brassica tournefortii*), sow thistle (*Sonchus oleraceus*), alkali mallow (*Malvella leprosa*), and alkali weed (*Cressa truxillensis*). Photographs 6 and 7 show typical vegetation communities present in the channels; some of which are concrete-lined. The habitat west of the junction of Bannister Road and Highway 86 supports creosote bush scrub consisting of creosote bush, brittlebush, saltbush, and ephedra (*Ephedra viridis*). No sensitive plant species were observed along this route.

IID Midway Interconnection

A 15-mile, single-circuit transmission line would be constructed from the new substation east to the existing IID Midway 230 kV substation. The 230 kV Midway substation would have a 161 kV line termination, a 161 kV breaker, and a 161/230 kV transformer installed for the connection of the 161 kV line (Figures 5.5-1A, 5.5-1E, and 5.5-1E). Agriculture, tamarisk scrub, and developed habitat exist along the entire route.

5.5.1.1.5 Well Pads

Production Wells

Ten production wells are proposed on five new well pads, with two wells on each pad (Figure 5.5-1A). The proposed location of Production Well Pad OB1 is in an agriculture field in the northeastern part of the northwest quarter of Section 33, with a grading footprint of approximately 300 feet by 700 feet. This location is adjacent to a freshwater marsh that supports Yuma clapper rail. This freshwater marsh was created by the Refuge and is considered a jurisdictional wetland according to the Corps and CDFG. An access road that is approximately four feet higher than the adjacent agricultural field is at the south end of this marsh and is located between the marsh and the proposed location of the well pad.

The proposed location of Production Well Pad OB2 and associated 560-foot by 560-foot grading footprint is immediately north of McKendry Road, southwest of Production Well Pad OB1. The proposed well pad location is occasionally used as an overflow parking lot during Refuge-sponsored events, and supports disturbed habitat with some desert sink scrub located on the west side of the site (Photograph 8). A 20-foot levee separates this proposed site from a freshwater marsh.

The proposed location of Production Well Pad OB3 and associated 300-foot by 700-foot grading footprint is on the south side of Obsidian Butte in the eastern half of Section 32. The IID actively mines this area for rocks used as riprap to line the roads adjacent to the Salton Sea (Photograph 9). The well pad will be located on a level portion of Obsidian Butte on the area previously disturbed by the IID. Desert sink scrub consisting of iodine bush (*Allenrolfea occidentalis*) and desert holly (*Atriplex hymenelytra*) surrounds the study area outside the grading limits of the proposed well-pad site.

The existing roadway between the west end of McKendry Road and Obsidian Butte is used to provide service to a gravel pit located on the Butte. The road width is approximately 10 feet, and varies along its length. In order to provide a route for the drilling rigs that would be required to construct the two production wells located on Obsidian Butte, the road would be widened by approximately 15 feet, providing a 25-foot wide road surface. The widening would occur along the south side of the existing road with standard civil construction equipment, including dump trucks, bulldozers, compacting machines and grading machines.

Installation of the pipeline will require installation of approximately 20 pipe supports along a 600-foot distance (one support every 30 feet) on the south side of the widened road. The pipe supports are anticipated to be 12 feet wide and constructed of steel. Each support will be elevated above grade, supported by two piles, each approximately 14 inches in diameter (see Figure 5.5-2). One of each pair of piles will be driven along the road slope and the other driven directly in the water. Construction of the pipeline will require cranes, a pile driving machine, fork lifts, welding machines and small trucks.

The proposed location of Production Well Pad OB4 and associated 300 foot by 700 foot grading footprint is in the southwest corner of the proposed power plant site (Photograph 10). This location is surrounded by agriculture, agricultural ditches supporting patches of disturbed riparian scrub and paved and gravel roads.

The proposed location of Production Well Pad OB5 and associated 300 foot by 700 foot grading footprint is in the southeastern corner of the same agriculture field as Well Pad OB4 and the plant site, immediately north of Peterson Road (Photograph 11). This location is surrounded by agriculture, agricultural ditches supporting patches of disturbed riparian scrub, and paved and gravel roads.

Injection Wells

In addition to the production wells, seven new injection wells on three new well pads are proposed (Figure 5.5-1A). The proposed location of Injection Well Pad OBI-1 and associated 300 foot by 700 foot grading footprint is on the west side of Gentry Road and north side of Lindsey Road in the southeast quarter of Section 4. The habitat at and around the site is agriculture.

The proposed location of Injection Well Pad OBI-2 and associated 300 foot by 700 foot grading footprint is on the west side of Cox Road and south of Peterson Road. The habitat at the site is agriculture (Photograph 12). This well pad is located south of the main injection areas of the Elmore, Vulcan, and Hoch Geothermal power plants.

The proposed location of Injection Well Pad OBI-3 is on the west side of Cox Road and south side of Montgomery Road, directly south of Well Pad OBI-2 in an agricultural field (Photograph 13). The proposed grading footprint of this well pad is 300 feet by 700 feet.

5.5.1.1.6 Production and Injection Pipelines

The 100-foot-wide pipeline corridors between the well pad sites and the existing power plant site traverse primarily agricultural land, drainage channels and paved or gravel roads. The pipeline corridor for Production Well Pad OB3 on Obsidian Butte would cross a brackish water marsh and would impact disturbed tamarisk and open water. A series of piers will support the pipeline crossing of the marsh and the widening of the existing dirt road to a width of 25 feet (Figure 5.5-2). The other agricultural drainage channels that will be spanned by the pipelines associated with the injection wells are vegetated with cattails (*Typha* spp.) and common reed (*Phragmites australis*) but are not considered waters of the United States because these agricultural drainages are a part of the IID water conveyance system built within a upland location, and are artificially derived and maintained by IID for agricultural production. The drainage function at these locations will not be affected by the pipeline crossings.

5.5.1.1.7 Water Supply Pipeline

The delivery point for the IID canal water will be the Vail 4A Lateral, Gate 460 at the southeast corner of the facility site, along Boyle Road. Transfer to the service water pond will be via a proposed 500-foot-long buried 10-inch pipeline. Developed/disturbed areas are present along the approximately 500-foot long section of pipeline.

5.5.1.2 Wildlife

Sensitive wildlife species are those listed by federal, state, and local agencies. The USFWS (1989, 1991) officially lists sensitive species as either threatened or endangered, or proposes such species for listing as threatened or endangered. The CDFG also lists species as threatened or endangered, or candidates for listing as Threatened or Endangered. Lower sensitivity animals may be listed as "Species of Special Concern" (SSC) (CDFG, 1991, 1992). Descriptions of detected and potentially occurring federally and state-listed animal species are provided below, along with detected species of lower sensitivity status. Animal locations are shown in Figures 5.5-1A through 5.5-1E. Refer to Table 5.5-1C for all detected and potentially occurring sensitive animal species within the study area.

5.5.1.2.1 Federal or State Listed Wildlife Species

Six wildlife species that are federally or state listed as Endangered or Threatened either have been detected in the study area or have a potential for occurring there. Detected species include the federal and state endangered Yuma clapper rail and Endangered California brown pelican. Potentially occurring are the federal or state endangered desert pupfish (*Cyprinodon macularius*), Southwestern willow flycatcher (*Empidonax traillii extimus*), and least Bell's vireo (*Vireo bellii pusillus*).

Desert Pupfish (Cyprinodon macularius)

This federal and state-listed endangered species frequents still or slow-moving bodies of water, including agricultural drainages. This small, silvery-colored fish develops quickly, sometimes reaching full maturity within two to three months, and has an average life span of six to nine months, with some surviving more than one year. Pupfish feed on brown and green algae, and may reach a length of three inches. During winter months, when the water is cold, they become dormant, burrowing in the muddy bottom of their habitat. As temperatures become extreme toward summer, evaporation dries up most pools and streams, resulting in the death of most pupfish. A few survive in the small number of pools, streams, and springs that do not dry up completely. Several threats to the desert pupfish are contributing its decline, including habitat destruction resulting from development and livestock grazing, and pollution by toxic agricultural by-products. Possibly the most significant threat to this species is the introduction of exotic fish species that prey upon and compete with desert pupfish for limited resources.

There are several historical records of this species in slow-flowing agricultural drainages throughout the Salton Sea area, including records in drainages in the Obsidian Butte study area. The pipeline corridor from Production Well Pad OB3 is proposed to cross an agricultural drainage west of the plant site. A survey conducted by Dr. Allen Schoenherr on February 11, 2002 did not detect desert pupfish within plots along the proposed pipeline route. CDFG surveys since 1998 have also been negative for the presence of desert pupfish. Habitat modification also is expected to be minimal and therefore no significant impacts to this species are expected to result from the project.

Mountain Plover (Charadrius montanus)

The mountain plover is a federally proposed threatened species and California Species of Special Concern. This species is found in relatively specialized habitats, breeding only in arid shortgrass prairies and wintering in agricultural fields, and heavily grazed and recently burned rangelands. Female mountain plovers often desert their first egg clutch, leaving the male to care for it while the female starts a new clutch with a different male. This species is occasionally observed in the Salton Sea area, and is usually associated with the agricultural fields and farmland in the area. Declines in the mountain plover population have been attributed to the conversion of the shortgrass prairie habitats to agricultural uses.

The mountain plover has not been observed within the project area, or at Obsidian Butte, but 139 individuals of this species were observed by AMEC biologists in a freshly burned field near Walker Road and Hoskins Road, about one mile west of the L-Line Interconnection route, on February 6, 2002 (D. King, personal communication). This species forages within agricultural fields that have been recently cleared or burned, a condition that is highly variable across the Imperial Valley throughout the year.

Yuma Clapper Rail (Rallus longirostris yumanensis)

The Yuma clapper rail (*Rallus longirostris yumanensis*) is a federally endangered and state threatened bird. It is common in summer, in localized freshwater wetlands in the Salton Basin and the lower Colorado River (Garrett and Dunn 1981, Wilbur 1987). It is found at both ends of

the Salton Sea and is known to be a breeding species in marshes on the lower Alamo and New Rivers. Its winter occurrence is uncertain, probably owing to its low detectability when not courtship-calling (Garrett and Dunn 1981). These secretive birds prefer extensive and undisturbed marshes for foraging and nesting, but they are adaptable to a range of ephemeral and disturbed wetland conditions in the interior (Garrett and Dunn 1989).

In a survey conducted by Ogden in 1994, a total of five clapper rail locations were detected on or adjacent to the study area. A single bird responded to taped calls at a freshwater marsh area at the southwest corner of Sinclair Road and Lateral Drain 4-A, near a potential well pad site. Seven clapper rails responded to calls from a freshwater marsh pond adjacent to the northern boundary of the project study area. Two additional clapper rails were recorded at the access road to Obsidian Butte adjacent to the plant site during the 2001 surveys conducted by URS biologists. Another individual was detected in an agricultural ditch just south of Production Well Pad OB1 by URS biologists in 2002. A complete version of the survey data is located in Appendix K.

California Brown Pelican (Pelicanus occidentalis californicus)

This federal and state-listed endangered species frequents marine habitats where it eats fish such as sardines and anchovies using a characteristic plunge-diving technique. This species is a colonial nester at predator-free sites, either nesting on the ground, or in trees and on cliff-faces. Often encountered over open water, California brown pelicans are an uncommon to abundant nesting resident or post-breeding visitor to the Salton Sea. Brown pelicans were observed during flyover surveys on several occasions in the project vicinity. Recent (late 1990s) nesting attempts by brown pelicans have been documented for Obsidian Butte and the mouth of the Alamo River, but were unsuccessful (Bradshaw, 2002).

Southwestern Willow Flycatcher (Empidonax traillii extimus)

This olive-green, neotropical migrant is found only in riparian forest habitats in the southwestern United States. This federal and state-listed endangered species' range extends from southern California to western Texas, including portions of southernmost Nevada and Utah and northernmost Sonora and Baja California del Norte (Unitt, 1987). Southwestern willow flycatchers nest in dense riparian vegetation associated with streams, rivers, lakes, springs and other wetlands (Sogge et al.). Nesting begins upon arrival at suitable breeding areas in late May and early June, and young are fledged from late June through mid-August (Brown, 1988). The flycatcher's decline is due to loss and degradation of riparian habitat combined with nest parasitism by the brown-headed cowbird (*Molothrus ater*). An historical observation of this species was recorded three miles west of Niland in 1952. This is outside of the study area for this project, and this species' habitat is not present in the study area.

Least Bell's Vireo (Vireo bellii pusillus)

The least Bell's vireo is a small, gray songbird that was historically a common summer visitor to riparian habitat throughout much of California. Currently, this species is found in restricted areas of riparian woodlands in southern California, with the majority of breeding pairs in San

Diego, Santa Barbara, and Riverside counties. The vireo's decline is due to loss and degradation of riparian habitat combined with nest parasitism by the brown-headed cowbird (*Molothrus ater*). Suitable riparian habitat for this species is not present in the project area. The transmission line would cross over a section of tamarisk (*Tamarix* spp.) dominated riparian habitat associated with the New River, however, no least Bell's vireo have been recorded historically in this area.

California Black Rail (Laterallus jamaicensis coturniculus)

The California black rail (*Laterallus jamaicensis coturniculus*) is a State-threatened species. The black rail is a marsh-dweller of uncertain status at the Salton Sea. It has suffered statewide population decline and in the interior is common only along the U.S. section of the lower Colorado River Valley (Garrett and Dunn 1981). There are no recent records for Baja California (Wilbur 1987). Occurrence is scattered in the Salton Basin, although some locations have numerous calling birds over periods of several weeks in spring (McCaskie 1979), strongly suggesting nesting. Winter records are few, and detectability for this species is very low in the non-breeding season. Nevertheless, migratory behavior has been suggested (Small 1974).

Black rails require dense vegetation cover at all times. They utilize *Salicornia* (pickleweed) marshes on the coast and *Scirpus* (bulrush) marshes along the Colorado River, but habitat associations in the Salton Basin have not been described. In surveys conducted by Courtney Conway (personal communication 2002; Conway et al. 2002) in 2000-2001, no black rails were detected within the project area. Surveys by URS biologists in Spring 2002 were also negative.

The proposed project will not adversely affect the California black rail. This species has not been observed within the project area. The nearest known black rail sighting is in the vicinity of Seely (P. Unitt personal communication). Therefore, no adverse effects on California black rail are expected to result from the construction or operation of the proposed project.

5.5.1.2.2 California Species of Special Concern

Other sensitive wildlife species that have been detected in the study area are briefly described below. Refer to Table 5.5-1C for additional sensitive species that are potentially occurring within the study area.

Flat-tailed Horned Lizard (Phrynosoma mcalli)

This species is currently being proposed for listing under the federal Endangered Species Act and is a California Species of Special Concern. It is an uncommon resident of fine, windblown (aeolian) sands of the low Colorado Desert in southern California and northeastern Baja California (Stebbins, 1985). Its diet consists exclusively of ants, and its coloration and scaling facilitate its existence in hot, dry environments. The primary threat to this species is habitat destruction due to development, off-road vehicle use, mining, and military activities. CNDDB results indicate that the nearest recorded flat-tailed horned lizard is approximately 15 miles to the southwest of the plant site, and 10 miles northeast of the proposed L-Line Interconnection terminus (See Appendix K for CNDDB search results).

Although native creosote bush scrub is present along the L-Line Interconnection route, habitat along the route is not considered suitable for flat-tailed horned lizard. The primary reasons is the lack of appropriate sandy soils and the degree of disturbance along this route, especially in the washes. Furthermore, no flat-tailed horned lizards were detected during a biological survey of this route in February and May, 2002.

Burrowing Owl (Athene cunicularia)

The breeding range of the North American subspecies of burrowing owl extends south from southern Canada into the western half of the United States and down into Baja California and central Mexico (Johnsgard, 1988). Burrowing owls inhabit open areas such as grasslands, pastures, coastal dunes, desert scrub, and the edges of agriculture fields (Unitt, 1984; Ogden unpublished data). Burrowing owls use rodent burrows or construct burrows in semi-compacted soil in the slopes of drainage channels next to agriculture fields throughout the year for shelter from weather and predators (Photograph 25 and 26). Burrowing owls also place their nests in burrows. The burrowing owl nesting distribution is strongly correlated to local burrow distribution. Nesting densities vary from eight pairs per square kilometer in optimal habitat to one pair per 58 square kilometers in poor quality habitat (Johnsgard, 1988). They form short-term pair bonds, with male territoriality peaking during pair formation and declining after eggs are laid. Not all burrowing owls capable of breeding do so every year. Burrowing owls have declined through much of their range because of habitat loss due to urbanization, agricultural conversion, and destruction of ground-squirrel colonies (Remsen, 1978). This species is common throughout the study area.

Van Rossem's Gull-billed Tern (Sterna nilotica)

The gull-billed tern (*Sterna nilotica*) is a California Species of Special Concern that established a highly disjunct breeding colony on the Salton Sea in the 1920s. Breeding numbers on the Salton Sea fluctuate dramatically between years and locations (McCaskie 1989, 1990, Molina 2000). During the 1990s, the Salton Sea population has ranged from 80 to 170 pairs. Breeding numbers have steadily declined as protected nesting islets and levees become inundated by the rising water level (Garrett and Dunn 1981). The main nesting location of this species is on Rock Hill, outside the project area, supporting up to 131 breeding pairs in 2000 (Molina 2000). Gull-billed terns did nest on the shoreline of Obsidian Butte during the mid-1990s. Gull-billed terns are versatile feeders and are equally adept at plunge-diving in water and picking invertebrate prey on the wing from ground or vegetation (Cogswell 1977).

Elegant Tern (Sterna elegans)

Elegant tern is a common spring and winter visitor to local coastal mudflats, lagoons and bays. A single nesting colony is known from the south end of San Diego Bay (Unitt 1984). No elegant tern was detected within the project area.

LeConte's Thrasher (Toxostoma lecontei)

Le Conte's thrasher is an uncommon resident of desert scrub, desert wash and alkali desert scrub habitats from Inyo County to the Mexican border. The species is especially wary of humans and is susceptible to human disturbance (Remsen 1978). Breeding season extends from late January to June. Its typical habitat consists of sparsely vegetated desert flats, dunes, alluvial fans, or gently rolling hills having a high proportion of one or more species of saltbush (*Atriplex* spp.) and/or cylindrical cholla cactus (*Opuntia* spp.) 0.9 - 1.9 meters high. It also occupies other desert habitats with similar structural profiles but lacking saltbush/shadscale or cholla cactus. Le Conte's thrasher was not detected within the project area.

American White Pelican (Pelecanus erythrorhynchos)

The American white pelican (*Pelecanus erythrorhynchos*) is a State species of special concern. It is a northern breeder that utilizes southern California in the non-breeding season. The Salton Sea supports the largest regional proportion of birds, which primarily stop over on spring and fall migration through the interior of California. American white pelicans require expanses of fairly shallow, calm water for foraging. These birds prefer fresh water, concentrating on various river mouths on the Salton Sea (Garrett and Dunn 1981). American white pelicans are known to feed and roost in the Salton Sea around the mouth of the Alamo River (B. Radke, personal communication). American white pelicans use the Salton Sea as a migratory stopover and wintering area. As a migratory stopover, individual pelicans appear to use the Salton Sea for a few weeks to a few months before continuing on their migration to Mexico (Shuford et al. 1999). Some birds probably remain at the Salton Sea throughout the winter rather than continuing on to Mexico. Although the American white pelican has been recorded in the project area, the implementation of proposed mitigation measures is expected to avoid significant impacts.

A number of other California Species of Special Concern that generally are too common and/or widespread to warrant detailed discussion, occur in the study area. These species include white-faced ibis (*Plegadis chihi*), long-billed curlew (*Numenius americanus*), and black tern (*Chlidonias niger*) and were found throughout the study area in their foraging habitats. The project is not expected to affect these species due to the abundance of potential wintering habitat in the project vicinity. The transient nature of these species precludes predicting their presence within a given area with any certainty. The presence of these species is not expected within any active construction area.

Birds of prey as a group are considered sensitive because of loss of foraging areas, their vulnerability to human disturbance at their nest site, low population densities, and their position at the top of the food chain. Several species were observed flying over and foraging within the project area, including northern harrier (*Circus cyaneus,* SSC), ferruginous hawk (*Buteo regalis*, SSC), prairie falcon (*Falco mexicanus,* SSC), and red-tailed hawk (*Buteo jamaicenis*). American kestrels (*Falco sparverius*) are especially abundant in the project area, and were observed foraging within the agricultural fields during all the biological surveys. Tall structures suitable for perching and nesting are uncommon in the study area and those that are present are used extensively by raptors. Raptors were observed using existing power poles and transmission towers for these purposes, as well as the scattered clumps of trees in the area.

5.5.1.2.3 Survey Methods and Avian Flyover Analysis

The major habitat types in the study area are associated with the Imperial Valley and the Salton Sea. The Imperial Valley includes natural habitat areas typical of the low Colorado Desert including of creosote bush scrub, and desert sink scrub. These habitats extend across portions of the Imperial Valley, which also has substantial agricultural development. The agricultural and developed areas surrounding the proposed power plant provide reduced or highly degraded values for wildlife, and therefore do not function as viable wildlife corridors for large mammals.

At the nadir of the Imperial Valley lies the Salton Sea, an artificially created body of Colorado River-derived water fed by irrigation canals and the New and Alamo Rivers. The elevation at the Salton Sea surface is 227 feet below sea level. Occupying the lakebed of ancient Lake Cahuilla, the highly-alkaline Salton Sea was created in 1905 when a diversion structure on the Colorado River failed, and the river flowed into the Salton Sink for 16 months (USFWS, 1997). The Salton Sea now functions as a migratory stopover for an abundance of bird life. In recognition of this, the Refuge was established in 1930, and covers 37,600 acres of mostly inundated area. The Refuge supports many wildlife species considered rare or otherwise sensitive in the region (Table 5.5-1C).

Several wildlife survey methods were employed for the SSU6 Project components, including early morning bird surveys, systematic walking and driving of alignments, and fish sampling through the use of minnow traps. Focused surveys were conducted for burrowing owl, Yuma clapper rail, and desert pupfish. Surveys were conducted by qualified wildlife biologists from or under contract with URS on several occasions from 1999 to 2002. Data gathered by Ogden Environmental and Energy Services (Ogden) in 1994 also is incorporated into this analysis. Survey dates, conditions and associated information are described in Table 5.5-1. The CNDDB also was reviewed to aid the surveys.

To document the numbers and types of waterfowl and shorebirds that may be impacted by new facilities and transmission lines in the project area, and the potential shorebird flyways between the Salton Sea and the project area, an avian flyover analysis was conducted by Ogden and URS. URS biologists collected data from several biological surveys of the Obsidian Butte study area during the fall/winter and spring/summer seasons of 1999-2002 and data collected from surveys done by Ogden in 1989 and 1994 were incorporated into the data set of waterfowl abundance and flyovers. Surveys consisted of shoreline and transmission-line flyover surveys, as well as avian abundance surveys in the project area.

In 1994 Ogden developed a survey protocol for the avian flyovers with the assistance of the USFWS, and with the approval of the California Energy Commission staff. Starting at sunrise, approximately five predetermined stations within the project area were visited each survey day. Flyover surveys at each station lasted 30 minutes, during which the species, direction, and approximate height of all shorebirds and waterfowl flying over a specific area were recorded. When a determination of species was not possible, birds were grouped into categories (e.g., terns, gulls, ducks, etc.). Flight elevation was estimated and grouped into three elevation categories: low (<75 feet), medium (75-150 feet), and high (>150 feet). These elevation categories are based on existing and proposed electrical transmission lines, and are determined to reflect potential hazards to waterfowl and shorebirds. Existing electrical transmission lines in the

study area are 40 to 60 feet above the ground, and new electrical transmission lines proposed for the project are expected to be 100 to 125 feet above the ground.

Data collection was restricted to waterfowl and shorebirds that were observed moving from resting areas to inland foraging areas or from foraging areas to resting areas, potentially placing them at risk from new facilities and transmission lines placed in the study area. Birds observed foraging along the shore, making short flights between the sea and immediately adjacent foraging habitat, traveling along the shoreline, or circling over the sea were recorded but not included in the data analysis as flyovers.

Following a flyover survey at a given station, URS biologists assessed the abundance of waterfowl and shorebirds and any sensitive species in the study area. A predetermined survey route that included all proposed well pads, the power plant site, and the transmission line, each with a 1,000-foot buffer zone, was traveled by vehicle, with periodic stops to scan and count for birds. Only birds that were present at the beginning of the count were recorded. Habitat-type and agricultural or other human activities were recorded, as well as the presence or absence of water in foraging areas. Weather conditions and time spent surveying at each station were also recorded. Field observations were made with binoculars and spotting scopes when necessary. Results of this analysis are for the elevations that are relevant to the SSU6 Project (75-150 feet) and are displayed in Figure 5.5-3. All survey data is available in Appendix K.

5.5.1.2.4 SSU6 Power Plant Site, Substation, and Construction Parking/Staging

In 1991 and 1994, desert pupfish were recorded in shoreline pools located near the mouth of Vail Drainages 4 and 5. Subsequent pupfish surveys of these pools (1998 to present) have been negative. Burrowing owl was detected in the vicinity of the plant site along McKendry Road and along Grubel Road, south of the plant site (see Figure 5.5-1A).

5.5.1.2.5 Transmission Lines

L-Line Interconnection

Figures 5.5-1A through 5.5-1E display the biological resources associated with the L-Line Interconnection transmission line route. The habitat along Lack and Bannister Roads consists of agriculture and associated canals, developed-residential, and a strip of riparian habitat dominated by tamarisk (*Tamarix* spp.) where the New River crosses Lack Road (Photograph 5). The agricultural drainage channels that follow Lack and Bannister roads consist of ruderal habitat. Burrowing owls occupy the southern two to three miles of the drainage channels along Lack Road and the drainage channels along Bannister Road near its intersection with Lack Road (Figure 5.5-1A).

The 2.8-mile corridor between Highway 86 and the L-line connection is currently owned by the BLM, and consists primarily of creosote bush scrub (Photographs 14 and 15) with areas of disturbed habitat near the highway. A large wash flows along the majority of the route and provides nesting and foraging habitat for several bird species, including great horned owl (*Bubo virginianus*), black-tailed gnatcatcher (*Polioptila melanura*), blue-gray gnatcatcher (*Polioptila caerulea*), and yellow-rumped warbler (*Dendroica coronata*) (Photographs 16 and 17). This

wash also appears to be an important corridor for carnivores, as manifested by the abundance of tracks, scat, and den sites (Photographs 18 and 19). Sign of coyote (*Canis latrans*), bobcat (*Felis rufus*), and kit fox (*Vulpes macrotis*) was detected in association with this wash during a biological survey of this route in February 2002.

The habitat along the proposed route is disturbed at various points. Evidence of off highway vehicles is present throughout this route (Photograph 20), especially near the highway and in the bottom of the larger washes in this area. Adjacent, and to the south of the route is an active landfill that incorporates most of Section 16. A fence line encircling the landfill area prevents further disturbance beyond the landfill property. The transmission line route also would cross a large bank-reinforcing berm that presumably prevents a large wash from encroaching upon the landfill property. This berm is approximately a half-mile in length, approximately 30 feet wide, and appears to be maintained often (Photograph 21).

IID Midway Interconnection

The proposed IID Midway Interconnection transmission line follows a route that ends at the Midway substation approximately 15 miles east of the project site (Figures 5.5-1A, 5.5-1D, and 5.5-E). Agriculture and developed habitat exist along the entire route, and provide only marginal value to native wildlife. However, some sensitive species were observed along the IID Midway Interconnection alignment. These species include burrowing owl (*Athene cunicularia,* Photograph 22), ferruginous hawk (*Buteo regalis*), prairie falcon (*Falco mexicanus)*, long-billed curlew (*Numenius americanus*), and white-faced ibis (*Plegadis chihi*). The ferruginous hawk, curlews, and ibis were observed foraging in the agricultural fields. Burrowing owl occupy burrows along the various roadside ditches and canals that flow adjacent to the agricultural fields.

5.5.1.2.6 Well Pads

Production Wells

The proposed location of Production Well OB1 and associated 300-foot by 700-foot grading footprint is adjacent to a freshwater marsh that supports Yuma clapper rail. This freshwater marsh was developed by the Refuge and is considered a jurisdictional wetland by the Corps and CDFG. URS biologists detected three clapper rails in this marsh during surveys in the summer of 2001. An additional clapper rail was detected in an agricultural ditch just south of this well pad by a URS biologist in 2002.

The proposed location of Production Well Pad OB2 and associated 560-foot by 560-foot grading footprint is immediately north of McKendry Road, southwest of Production Well Pad OB1. The proposed well pad location is occasionally used as an overflow parking lot during Refuge-sponsored events, and supports disturbed habitat with some desert sink scrub adjacent to the western side of the site (Photograph 8). A 20-foot levee separates this proposed site from a freshwater marsh. Two clapper rails were detected in a disturbed wetland area associated with Vail Drain 5, which is directly adjacent to the proposed well pad location. A burrowing owl was observed on several occasions in the southwest corner of this well pad site in 2001; however, no burrows were found within the proposed Well Pad site (Figure 5.5-1A).

The proposed location of Production Well Pad OB3 and associated 300-foot by 700-foot grading footprint is on the south side of Obsidian Butte in the eastern half of Section 32 (Photograph 9). Although gull-billed terns have historically nested on the north edge of Obsidian Butte, no confirmed nesting has been reported at this location for the last two years. The primary nesting site of gull-billed terns is located on Rock Hill, an island in the Salton Sea northeast of the proposed Obsidian Butte study area (Molina 2000). No burrowing owl or clapper rails were detected, and no suitable habitat for these species is present at this location on Obsidian Butte. Although California brown pelicans historically have nested along the southern edge of Obsidian Butte, no nesting has occurred in recent years (Bradshaw, 2002).

The proposed location of Production Well Pad OB4 and associated 300-foot by 700-foot grading footprint is in the southwestern corner of the plant site (Figure 5.5-1A and Photograph 10). One burrowing owl was detected along McKendry Road adjacent to the plant site and about 1000 feet east of the plant site. Clapper rail habitat is not present at this site.

The proposed location of Production Well Pad OB5 and associated 300-foot by 700-foot grading footprint is at the northeastern corner of Severe and Peterson Roads (Figure 5.5-1A and Photograph 11). This location is surrounded by agriculture and paved and gravel roads. Two burrowing owls were detected south of the well pad. Clapper rail habitat is not present at this site.

Injection Wells

The proposed location of Injection Well Pad OBI-1 and associated 300-foot by 700-foot grading footprint is on the west side of Gentry Road and north side of Lindsey Road in the southeast quarter of Section 4 (Figure 5.5-1A). A burrowing owl pair was detected on the side of a drainage channel approximately 200 feet west of the proposed well pad site along Lindsey Road. Three additional burrowing owl were observed along the east side of this well pad in 2002.

The proposed location of Injection Well Pad OBI-2 and associated 300-foot by 700-foot grading footprint is on the west side of Cox Road and south of Peterson Road (Photograph 12). Two burrowing owls were detected just north of this proposed well pad site in February 2002. Clapper rail habitat is not present at this site.

The proposed location of Injection Well Pad OBI-3 is on the west side of Cox Road and south side of Montgomery Road, directly south of Well Pad OBI-2 in an agriculture field (Figure 5.5-1A and Photograph 13). A burrowing owl was detected on the east side of this well pad. Clapper rail habitat is not present at this site.

5.5.1.2.7 Production and Injection Pipelines

The 100-foot wide (plus an additional 10 percent to allow for expansion joints) pipeline ROW between the well pad sites and the power plant site traverse primarily agricultural land, drainage channels and paved or gravel roads. The pipelines associated with Production Well Pads OB1 and OB2 would traverse agricultural and disturbed land for their entire length, approximately 4600 feet and 700 feet, respectively. The pipeline corridor for Production Well Pad OB3 on Obsidian Butte would cross a wetland that is occupied by Yuma clapper rail and historically was occupied by desert pupfish. A burrowing owl was also seen at this location (see Figure 5.5-1A). Yuma clapper rail were observed in the vicinity of the pipeline from Production Well Pad OB1 (see Figure 5.5-1A).

Other agricultural drainage channels that will be crossed by the pipelines associated with the injection wells are sparsely vegetated with cattails and have the potential to support clapper rail. However, no clapper rails were detected in any of these channels during surveys. Burrowing owls were detected near the corner of Severe Road and McKendry, as well as in the vicinity of the proposed injection pipelines near Injection Well Pads OBI-1, OBI-2 and OBI-3.

5.5.1.2.8 Water Supply Pipeline

No sensitive species were detected along the approximately 500 foot long section of pipeline.

5.5.1.3 Economically Important Species

None of the native plant or animal species in the general project area are used for economic purposes at this time, and it is unlikely that any would be considered economically important. The greatest potential economic use of biological resources in the area is recreational use (for instance, bird watching); however, within the project area, this does not represent a substantial contribution to regional resources at this time. Another potential economic use of the (non-protected) biological resources is cattle grazing. Cattle grazing can degrade wildlife habitats by causing direct impacts to habitats and by facilitating the introduction of exotic plant species.

5.5.1.4 Special Environmental Areas in the Project Vicinity

A number of special environmental areas exist in Imperial County. This section summarizes these special areas in the region. Special environmental areas in the project vicinity are shown on Figure 5.8-1A of Section 5.8 (Land Use).

Sonny Bono National Wildlife Refuge. The USFWS currently manages the 37,600-acre Refuge, most of which is now inundated due to flooding by the Salton Sea. However, 1785 acres of agricultural fields and freshwater marsh on the refuge remain manageable.

California Desert Conservation Area. In 1976, Congress designated a 25 million acre swath of Sonoran, Mojave and Great Basin deserts — stretching from the Mexican border north to Death Valley and the eastern Sierra Nevada Mountains — as the California Desert Conservation Area (CDCA). The CDCA includes some of the most scenic and biologically important areas in Imperial, San Diego, Los Angeles, Riverside, San Bernardino, Kern, Inyo, and Mono counties. The 1994 California Desert Protection Act further increased protection by designating 3.5 million acres of the CDCA as wilderness, turning Death Valley and Joshua Tree National Monuments into National Parks, and establishing the 1.6 million acre Mojave National Preserve. The portion of the L-Line interconnection that would cross over BLM-owned land is within the CDCA.

5.5.2 Environmental Consequences

This section discusses impacts on biological resources that are expected to result from the project. These potential impacts are described by project component. Impact acreages are described by project component per vegetation type in Table 5.5-1D. Site selection and routing of project components have been specifically designed to avoid or substantially minimize

adverse effects. Many of the linear facilities are also within existing disturbed areas along the transmission line and adjacent to existing roads.

Biological impacts would be considered significant if they involved the loss of sensitive plant or animal species, or degradation of their habitat. The project would have a significant impact on vegetation and wildlife if it would:

- Cause a fish or wildlife population to drop below self-sustaining levels (CEQA Guidelines, Section 15065(a))
- Threaten to eliminate a plant or animal community (CEQA Guidelines, Section 15065(a))
- Substantially affect, reduce the number, or restrict the range of an endangered, rare or threatened species of animals or plants, or the habitat of the species (CEQA Guidelines, Section 15065(a))

Direct impacts occur when biological resources are altered or destroyed during the course, or as a result, of project implementation. Examples of such impacts include removal or grading of vegetation, filling wetland habitats, or severing or physically restricting the width of wildlife corridors. Other direct impacts may include loss of foraging or nesting habitat and loss of individual species as a result of habitat clearing. Indirect impacts may include elevated levels of noise or lighting, change in surface water hydrology within a floodplain and increased erosion or sedimentation. These types of indirect impacts can affect vegetation communities or their potential use by sensitive species. Permanent impacts may result in irreversible damage to biological resources. Temporary impacts are interim changes in the local environment due to construction and would not extend beyond project-associated construction, including revegetation of temporarily disturbed areas adjacent to native habitats. Impacts to jurisdictional waters, wetlands, or habitats occupied by listed species would be significant and require mitigation measures to avoid, minimize, or compensate for the impact. The threshold for noise impacts established by the USFWS is 60 dBA L_{eq} hourly within habitat occupied by listed bird species.

5.5.2.1 SSU6 Power Plant Site, Substation, and Construction Parking/Staging

Development of the plant site will result in the long-term loss of approximately 80 acres of agricultural lands, and development of the substation will result in the loss of 11 acres of agricultural land. This loss of agriculture is not considered significant by itself or cumulatively with other project impacts because this vegetation type is not considered regionally important as habitat for wildlife in the region.

In addition, approximately 20 acres of the 160-acre parcel would experience temporary impacts resulting from construction of this power plant, lay down areas and construction parking areas. Development of the site is not expected to represent an incremental loss of raptor foraging habitat, and should not be limiting to raptor species in the area. Temporary night lighting associated with the plant may potentially impact adjacent wildlife habitat.

Sound levels as a result of plant construction within the Yuma clapper rail habitat located to the northwest and west would range from 51 dBA to 70 dBA. Sound levels would be at the higher range when working near the habitat and at the lower range at the farther point from the habitat. The

USFWS considers 60 dBA L_{eq} hourly to be the threshold of significance for breeding birds. Therefore, the Yuma clapper rail may be significantly impacted by construction noise during the breeding season. Other listed species present in the project vicinity as non-breeding individuals would not be significantly impacted by construction noise.

During plant commissioning, a method used to clean piping and testing called "steam blows" creates substantial noise. A steam blow results when high-pressure steam is allowed to escape into the atmosphere through the steam piping to clean the piping. The steam blow is expected to last for approximately 36 hours. Unsilenced steam blows would produce a sound level of approximately 102 dBA at the closest point to the clapper rail habitat (approximately 650 feet from the source). The project proposes to include a silencer, designed by Fluid Kinetics Corporation, that would provide 44 dBA of attenuation. The resultant sound level in the habitat would be approximately 58 dBA. Therefore, no significant impacts to Yuma clapper rail, desert pupfish, brown pelican, mountain plover, American white pelican, burrowing owl, gull-billed tern, least Bell's vireo, or southwestern willow flycatcher would occur from the steam blows.

Sound levels as a result of plant operation within the Yuma clapper rail habitat located to the northwest and west would be less than 60 dBA L_{eq}. Therefore, no significant noise impacts to the Yuma clapper rail would occur as a result of plant operation.

Equipment used during construction of the facilities and operations will result in air emissions of particulate matter (PM_{10}), nitrogen oxides (NO_X), carbon monoxide (CO), hydrogen sulfide (H_2S), sulfur dioxide (SO_2), and ammonia. These pollutants have the potential to affect biological resources. Each is reviewed below.

PM_{10} Airborne particulates have the potential to affect biological resources by either physical or chemical processes. The physical means include the coating of particulate on the organism. Deposition rates of 365 grams per square meter per year of PM_{10} have been used as a potential threshold in determining significance of this affect on previous CEC power plant projects. SSU6 potential deposition rate is expected to be less than 29 grams per square meter per year, a small fraction of the above listed threshold.

This value was calculated using the maximum annual concentration (0.3 $\mu g/m^3$) together with the maximum background concentration of 45.6 $\mu g/m^3$ and a deposition velocity of 2 cm/sec. The chemical affects of PM_{10} on biological resources are derived from the presence of toxic elements in the particulate matter. The mechanisms of effect are complex and subject to many factors. Nonetheless, uptake of these elements is not expected to significantly change unless the deposited particulate matter makes the trace elements more available or more concentrated than currently present in the soil. Considering the projected level of PM_{10} impact from the SSU6 Project, which is below the federal ambient significance level, no significant impacts are expected.

NO_2 Nitrogen dioxide is a potential phytotoxic air pollutant. A 1-hour exposure of 7,500 $\mu g/m^3$ and an annual exposure of 219 $\mu g/m^3$ have been used as thresholds in previous CEC power plant projects in determining significance. The SSU6 Project's potential maximum 1-hour NO_2 concentration, including a conservative background, is 442 $\mu g/m^3$ (209 $\mu g/m^3$ from the SSU6 Project) and annual NO_2 concentration is 25 $\mu g/m^3$ (0.6 $\mu g/m^3$ from the SSU6 Project). These concentrations are below the threshold levels.

CO Carbon monoxide can have a detrimental affect on vegetation at high concentrations. A 1-hour exposure of 115,000 µg/m^3 has been used as a threshold in other CEC power plant projects in determining significance. SSU6 potential maximum 1-hour concentration, including a conservative background, is 15,990 µg/m^3(SSU6 Project's contribution to the total is 2,190 µg/m^3). This concentration is below the proposed threshold.

SO_2 Sulfur dioxide's affect on biological resources ranges from gaseous impacts as a phytotoxic gas, indirect as a reaction product, acidification of soil as sulfate, or reaction by formation of sulfuric acid mist. The following thresholds have been used in other CEC power plant projects in determining significance:

	Proposed Threshold	*SSU6 Project*
SO_2 (1-hour)	1,310 µg/m^3	146 µg/m^3 (51)
SO_2 (3-hour)	786 µg/m^3	90 µg/m^3 (22)
SO_2 (Annual)	130 µg/m^3	8 µg/m^3 (0.1)

The SSU6 Project's impacts including background are also listed. The SSU6 Project's individual impact is listed in the parentheses. All are below the thresholds.

H_2S Review of the International Program on Chemical Safety (IPCS) (www.inchem.org) studies on hydrogen sulfide indicate that H_2S effects on biological resources are expected to be similar to those for public health. Since H_2S concentrations from the project are not expected to adversely impact public health, the H_2S levels are not expected to adversely impact biological resources either. There is no known scientific data that H_2S adversely affects plants.

Ammonia Emissions of ammonia can potentially affect biological resources in several different ways. The first is through direct gaseous affects. The second is through secondary affects, such as direct deposition of ammonia (eutrophication – increased nutrient loading, or deposition of nitrogen oxides, i.e., acidification). For terrestrial plants, nitrogen is a very important component for plant metabolism and growth. At high concentrations (10,000 µg/m^3 per hour; 600 µg/m^3 per 24-hour; 75 µg/m^3 annually), ammonia can potentially affect vegetation. The SSU6 Project has a maximum impact as outlined below:

	Proposed Threshold	*SSU6 Project*
Ammonia (1-hour)	10,000 µg/m^3	2,365 µg/m^3
Ammonia (24-hour)	600 µg/m^3	326 µg/m^3
Ammonia (Annual)	75 µg/m^3	26 µg/m^3

Source: www.inchem.org

The impact levels are below the proposed thresholds. Based on the gaseous concentrations, secondary affects are also expected to be below significance levels.

5.5.2.2 Transmission Lines

Impacts on biological resources that may occur along the transmission lines due to the potential bundling operations (i.e., construction and conductoring of new towers) will be restricted to areas around the transmission towers and at pull sites. Impacts have been calculated assuming that temporary disturbance will occur during the bundling operation, and at pull and tension sites. Most of the work to be performed at each tower would occur on existing roads or in existing disturbed areas. A new access road would be required for the western portion of the L-Line route on BLM lands.

Project-related impacts will be temporary in nature and habitats will be allowed to regenerate once construction is completed. The impacts are also distributed over great distances, from tower to tower and at a few pull sites; therefore, the magnitude of the impact at each site will be very low relative to the surrounding habitat. No adverse impacts on biological resources are expected to occur at other areas along the transmission line corridor (e.g., between existing tower locations). Therefore, these short-duration construction activities are not expected to be disruptive of wildlife populations in general or to sensitive habitats such as desert washes.

Because of the abundance of birdlife associated with the Refuge, the newly installed transmission lines could potentially cause increased bird mortalities resulting from birds flying into these transmission lines. Portions of the proposed transmission lines that will require bird diverters according to the avian flyover analysis are shown in Figure 5.5-3.

Preconstruction surveys will be performed at appropriate times of the year to determine the presence of sensitive plants, animals or habitats at the proposed disturbance areas. The exact locations of pull sites and their footprints will be modified to the extent feasible to avoid direct impacts on these sensitive resources. Similarly, the zone of disturbance at each tower will be modified, as practicable, to ensure minimization of impacts. Disturbance footprints should be modified to avoid direct impacts on sensitive plants and animals. Impacts to sensitive species along the transmission line are unlikely, based upon the assumed impact footprints in disturbed habitat (refer to Figures 5.5-1A through 5.5-1E) and the scheduling of construction, as practicable, to exclude the bird breeding season (March 1 to July 31), in areas where breeding individuals are present.

5.5.2.3 Well Pads

Construction of the production wells outside the plant site will result in the long-term loss of approximately 16.8 acres of agricultural land, 4.8 acres of disturbed habitat, and 1.99 acres of desert sink scrub. This does not represent a significant impact on biological resources, and no sensitive species will be affected by this project component. Construction of Production Well Pads OB1, OB2, and OB3 will occur during the non-breeding season. The remainder of the production and injection well pads are within agricultural fields that are not directly adjacent to wildlife habitat.

Construction of the injection wells will result in the long-term loss of approximately 14.5 acres of agricultural land. This does not represent a significant impact on biological resources, and no sensitive species will be affected by this project component.

Well Pad Development. Acoustical calculations were performed to estimate the location of the 60 dBA L_{eq} noise contour from well development activities. Noise from the operation was assumed to have point-source acoustical characteristics. The results of the calculations are summarized in Table 5.5-1E. A review of the table shows that the 60 dBA L_{eq} noise contour would be approximately 560 to 890 feet from the well pads. Yuma clapper rails within 890 feet of Production Well Pads OB1, OB2, and OB3 would be potentially exposed to sound levels that exceed 60 dBA L_{eq}. Because no well pad development would occur at these well pads during the breeding season (March through July), no significant impact would occur. Additionally, burrowing owl, gull-billed tern, brown pelican, American white pelican, and California black rail would also not be significantly impacted because well development would occur outside the breeding season.

Well Pad Operation. Acoustical calculations were performed as described for well pad development above to estimate the location of the 60 dBA L_{eq} noise contour from operation. The contour is approximately 30 feet from the noise source and will remain within the boundaries of the well pad. No significant noise impacts would occur.

5.5.2.4 Production and Injection Pipelines

The 100-foot wide (plus an additional 10 percent to allow for expansion joints) pipeline corridors between the well-pad sites and the existing power-plant site will permanently impact approximately 140 acres of agricultural lands. The pipeline corridor for Production Well Pad OB 3 on Obsidian Butte will cross wetland habitats that may be occupied by Yuma clapper rail. About 0.1 acre of Corps jurisdictional wetlands and 0.4 acre of CDFG jurisdictional wetlands are expected to be impacted as a result from the creation of a series of piers that will support the pipeline crossing of the inundated area and the widening of the existing road to 25 feet (Figure 5.5-2). The pipeline corridor and road widening will require authorization under Section 404 of the Clean Water Act, which will be obtained from the Corps, and under Section 1603 of the California Fish and Game Code, which will be obtained from the CDFG. Authorizations for impacts to species protected under the federal Endangered Species Act (FESA) and the California Endangered Species Act (CESA) will be obtained through Section 7 of the FESA and Section 2080.1 and/or 2081 of the California Fish and Game Code. The other narrow agricultural drainage channels that will be spanned by the pipelines associated with the injection wells are sparsely vegetated with cattails. No Yuma clapper rails or burrowing owls were detected in or adjacent to any of these channels during surveys, and therefore no significant impacts are expected.

Acoustical calculations were performed as described above for well pad development to estimate the location of the 60 dBA L_{eq} noise contour from pipeline construction to evaluate potential noise impacts to the Yuma clapper rail. Calculations show that the 60 dBA L_{eq} noise contour is approximately 900 feet from the pipeline. Yuma clapper rails within 900 feet of the pipeline between the plant site and Production Well Pads OB1, OB2, and OB3 would be exposed to sound levels that exceed 60 dBA L_{eq}. Because no construction would occur on the production pipelines associated with OB1, OB2, and OB3 during the breeding season (March through July) without the approval of CDFG and USFWS, no significant impact would occur. Additionally, burrowing owl, gull-billed tern, brown pelican, American white pelican, and California black rail would also not be significantly impacted because pipe construction would occur outside the breeding season.

Installation of the pipeline between the west of end of McKendry Road and Obsidian Butte would require installing 20 pipe supports along the 600-foot distance where the road would be widened. In addition to typical construction equipment, pile driving would be required significantly increasing the noise levels expected during construction. Because no construction would occur during the breeding season (March through July), no significant impact would occur to the clapper rail.

5.5.2.5 Water Supply Line

An approximate 500-foot long water supply line would be connected to the service water pond within the plant facility. A 25-foot ROW would be required for construction. This pipeline will temporarily impact approximately 0.3 acres of developed lands and no significant adverse impacts are expected to biological resources.

5.5.3 Cumulative Impacts

With mitigation, the SSU6 Project will not have significant adverse effect on any listed species.. The potential for cumulative impacts from the project is associated with the minor potential to disrupt animal use of and wildlife movement through the area of the Salton Sink surrounding the plant site. All other impacts affect relatively minor areas and are temporary in nature.

There will be a loss of <0.1 acre of suitable clapper rail habitat, potential construction noise impacts to habitat potentially occupied by listed species, loss of foraging habitat for burrowing owls and the displacement of at least three pairs of owls currently on or adjacent to areas that will be graded. Pre-construction burrowing owl surveys will determine the number of owls that will need to be passively relocated.

The cumulative impacts to specific environmental resources resulting from the proposed project and other projects in the area are less than significant. These other projects would be mitigated through project specific mitigation measures and coordinated regionally through mitigation from the Salton Sea Authority and IID. A list of the proposed projects in the area appears below. The source of this information was the Draft Habitat Conservation Plan for the IID Water Conservation and Transfer Project (IID HCP).

- North Baja Pipeline Project
- State Route 78/111 Expressway (Brawley Bypass)
- Solar Evaporation Pond Pilot Project
- Baja California Power and Sempra Energy Resources
- Imperial Irrigation District Water Conservation and Transfer Project/Habitat Conservation Plan

5.5.4 Stipulated Conditions

As discussed in the previous sections, this project will not result in any significant adverse impact to least Bell's vireo, brown pelican, white pelican, mountain plover, burrowing owl, gull-billed tern, southwestern willow flycatcher, desert pupfish, or Peirson's milk-vetch. Potentially significant noise impacts may occur in Yuma clapper rail habitat during construction of the plant. A detailed noise study will be conducted prior to construction of the facility to identify the noise reduction requirements to reduce noise levels to 60 dBA L_{eq} or below in Yuma clapper rail habitat.

Implementation of the measures listed below by the Applicant will reduce project-related impacts to a less than significant level

Bio-1: **General Measures.** The Applicant will implement the mitigation measures identified in the AFC. The Applicant's proposed mitigation measures will be incorporated into the final Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) unless the mitigation measures conflict with mitigation required by the USFWS and the CDFG that is contained in any advice letters or comments rendered by those agencies.

Protocol: The Applicant will:

- Site generator line poles, access roads, pulling sites and storage and parking areas to avoid sensitive resources whenever possible
- Design and construct generator lead poles and lines to reduce the likelihood of electrocutions of large birds
- Implement a Worker Environmental Awareness Program
- Hire a qualified biologist, who is acceptable to the CEC, USFWS and CDFG staff, to conduct pre-construction surveys no more than 14 days prior to initiation of construction in any portion of the project area
- Clearly mark construction area boundaries with stakes, flagging and /or rope or cord to minimize inadvertent degradation or loss of adjacent habitat during facility construction. All equipment storage will be restricted to designated construction zones or areas that currently are not considered sensitive species habitat
- Designate a specific individual as a contact representative between the Applicant, USFWS, CEC and CDFG to oversee compliance with mitigation measures detailed in the CEC Staff Assessment and all related permits
- Provide a qualified wildlife biologist to monitor all activities that may result in incidental take of listed species
- Provide a post-construction compliance report, within forty-five (45) calendar days of completion of the project, to the USFWS, CDFG and CEC
- Prohibit firearms except those carried by security personnel
- Prohibit pets from the project site
- Minimize the use of rodenticides and herbicides in the project area
- Consult with the USFWS, CDFG and CEC regarding appropriate protection measures for special-status species following resolution of any emergency situation that takes place in sensitive habitat during clean-up activities

At least 30 days prior to start of any project related ground disturbance activities, the Applicant shall provide the CEC Compliance Project Manager (CPM) with the final version of the BRMIMP for this project, and the CMP will determine the plan's acceptability within 15 days of receipt of the final plans. Implementation of the above measures shall be included in the BRMIMP.

Bio-2: **Approved Designated Biologist**. Construction site and/or ancillary facilities preparation shall not begin until a CEC CPM-approved designated biologist is available on site prior to initial construction start-up. The CPM-approved designated biologist shall perform the following duties: 1) advise the Applicant's supervising construction or operations engineer on the implementation of the biological resource Conditions of Certification; 2) supervise or conduct mitigation, monitoring and other biological resource compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as waterways and special-status species; and 3) notify the Applicant and the CPM of any non-compliance with any Condition.

***Protocol*:** The designated biologist must meet the following minimum qualifications:

- A bachelor's degree in biological sciences, zoology, botany, ecology or a closely related field
- Three years of experience in field biology or current certification of a nationally recognized biological society, such as the Ecological Society of America or The Wildlife Society
- One year of field experience with resources found in or near the project area
- Ability to demonstrate to the satisfaction of the CPM the appropriate education and experience for the biological resource tasks that must be addressed during project construction and operation

If the CPM determines that the proposed designated biologist is unacceptable, the Applicant shall submit another individual's name and qualifications for consideration. If the approved designated biologist needs to be replaced, the Applicant shall obtain approval of a new designated biologist by submitting to the CPM the name, qualifications, address and telephone number of the proposed replacement. No disturbance will be allowed in any designated sensitive area(s) until the CPM approves a new designated biologist and that designated biologist is on site.

Verification: At least 30 days prior to the start of surface disturbing activities at the project site and/or at ancillary facilities, the Applicant shall submit to the CPM for approval, the name, qualifications, address and telephone number of the individual selected by the Applicant as the designated biologist. If a designated biologist is replaced, the information on the proposed replacement as specified in the condition must be submitted in writing to the CPM.

If the Applicant is not in compliance with any aspect of this condition, the CPM will notify the Applicant of this determination within 14 days of becoming aware of the existence of any noncompliance. Until the Applicant corrects any identified problem, construction activities will be halted in areas specifically identified by the CPM or designee, as appropriate, to ensure the potential for significant biological impacts is avoided.

For any necessary corrective action taken by the Applicant, the CPM shall:

- Make a determination of success or failure of such action after receipt of notice that corrective action is completed, or
- Notify the Applicant that coordination with other agencies will require additional time before a determination can be made.

Bio-3: **Designated Biologist Duties**. A CPM-approved designated biologist shall perform the following duties: advise the Applicant's supervising construction or operations engineer on the implementation of the biological resource Conditions of Certification; supervise or conduct mitigation, monitoring, and other biological resources, such as wetlands and special statutes species; and notify the Applicant and the CPM of any non-compliance with any condition.

Verification: The designated biologist shall maintain written records of the tasks described above and summaries of these records shall be submitted to the CPM along with the Monthly Compliance Reports.

Bio-4: **Utilize Designated Biologist.** The Applicant's supervising and operating engineer shall act on the advice of the designated biologist to ensure conformance with the biological resources Conditions of Certification. The designated biologist shall: advise the Applicant and the supervising construction and operating engineer when to resume construction, and advise the CPM if any corrective actions are needed or have been instituted.

Protocol: The Applicant's supervising construction and operating engineer shall halt, if needed, all construction activities in areas specifically identified by the designated biologist as sensitive to ensure that potential significant biological resource impacts are avoided. The designated biologist shall:

- Advise the Applicant and the supervising construction and operating engineer when to resume construction
- Advise the CPM if any corrective actions are needed or have been instituted.

Verification: Within two working days of a designated biologist's notification of non-compliance with a Biological Resources Condition or a halt of construction, the Applicant shall notify the CPM by telephone of the circumstances and actions being taken to resolve the problem or the non-compliance with a Condition. For any necessary corrective action taken by the Applicant, a determination of success or failure will be made by the CPM within five working days after receipt of notice that corrective action is completed, or the Applicant will be notified by the CPM that coordination with other agencies will require additional time before a determination can be made.

Bio-5: **Implementation of Worker Environmental Awareness Program**. The Applicant will develop and implement a Worker Environmental Awareness Program in which each of its own employees, as well as employees of contractors and subcontractors who work on the project site or related facilities during construction and operation, are informed about biological resources sensitivities associated with the project.

Protocol: The Worker Environmental Awareness Program:

- Shall be developed by the designated biologist and consist of an onsite or classroom presentation in which supporting written material is made available to all participants
- Must discuss the locations and types of sensitive biological resources on the project site and adjacent areas

- Must present the reasons for protecting these resources
- Must present the meaning of various temporary and permanent habitat protection measures
- Must identify whom to contact if there are further comments and questions about the material discussed in the program.

Verification: At least 30 days prior to the start of rough grading, the Applicant shall provide copies of the Worker Environmental Awareness Program and all supporting written materials prepared by the designated biologist and the name and qualifications of the person(s) administering the program to the CPM for approval. The Applicant shall state in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date.

Bio-6: **USFWS and CDFG Consultation**. Prior to construction the Applicant shall provide to the CPM final copies of the final comment or opinion obtained from the U.S. Fish and Wildlife Service (UFWS) and/or the California Department of Fish and Game (CDFG), if any, and incorporate the terms of any agreement(s) into the BRMIMP.

Verification: At least 30 days prior to the start of rough grading, the Applicant shall submit to the project CPM copies of the final USFWS comment or opinion, if any.

Bio-7: **Approval of BRMIMP**. The Applicant shall submit to the CPM for review and approval a final copy of the Biological Resources Mitigation Implementation and Monitoring Plan.

Protocol: The BRMIMP shall identify:

- All sensitive biological resources to be impacted, avoided, or mitigated by project construction and operation
- All conditions agreed to in any USFWS Consultation and/or CDFG Consultation conducted for the proposed project
- All mitigation, monitoring and compliance conditions included in the CEC's final decision
- All conditions agreed to in the U.S. Army Corps of Engineers (USACE) Clean Water Act permit(s), if required
- All conditions specified in a CDFG streambed alteration permit, if required
- Required mitigation measures for each sensitive biological resource
- Required habitat compensation, including provisions for acquisition, enhancement and management, for any loss of sensitive biological resources
- A detailed plan for protecting the existence and monitoring the integrity of wetlands on or near the project site or facilities
- A detailed description of measures that will be taken to avoid or mitigate temporary disturbances from construction activities

- All locations, on a map of suitable scale, of laydown areas and areas requiring temporary protection and avoidance during construction
- Aerial photographs of all areas to be disturbed during project construction activities - one set prior to site disturbance and one set subsequent to completion of mitigation measures. Include planned timing of aerial photography and a description of why times were chosen
- Monitoring duration for each type of monitoring and a description of monitoring methodologies and frequency
- Performance standards to be used to help decide if/when proposed mitigation is or is not successful
- All remedial measures to be implemented if performance standards are not met
- A process for proposing plan modifications to the CPM and appropriate agencies for review and approval.

Verification: At least 45 days prior to rough grading, the Applicant shall provide the CPM with the final version of the BRMIMP for this project, and the CPM will determine the plan's acceptability within 15 days of receipt of the final plan. The Applicant shall notify the CPM five working days before implementing any modifications to the BRMIMP.

Within 30 days after completion of construction, the Applicant shall provide to the CPM, for review and approval, a written report identifying which items of the BRMIMP have been completed, a summary of all modifications to mitigation measures made during the project's construction phase, and which condition items are still outstanding.

Bio-8: **Facility Closure.** The Applicant will incorporate into the planned permanent or unexpected permanent closure plan measures that address the local biological resources. The biological resources facility closure measures also will be incorporated into the BRMIMP. (See Condition of Certification Bio-7, above)

The planned permanent or unexpected permanent closure plan will address the following biological resources related mitigation measures:

1. Removal of transmission conductors when they are no longer used and useful
2. Removal of all power plant site facilities, and
3. Measures to restore wildlife habitat to promote the re-establishment of native plant and wildlife species.

Verification: At least 12 months (or a mutually agreed upon time) prior to the commencement of closure activities, the Applicant shall address all biological resources related issues associated with facility closure in a Biological Resources Element. The Biological Resources Element will be incorporated into the Facility Closure Plan and include a complete discussion of the local biological resources and proposed facility closure mitigation measures.

5.5.5 Mitigation Measures

In addition to standard CEC biological conditions, Applicant identifies the following additional mitigation measures to ensure that the project is environmentally conscious and low impact. These additional measures are more accurately described as enhancements because Applicant is proposing them to provide benefits to the biological community and environment.

Bio-9: **Drainage and Erosion.** The project shall be designed and constructed to prevent spills from endangering adjacent properties and waterways and to prevent runoff from any source being channeled or directed in ways possibly resulting in erosion, siltation, or other detriments.

Bio-10: **Construction Noise Abatement.** A detailed project-specific construction noise assessment will be conducted during final design to determine the most practicable measures to reduce/mitigate construction noise impacts. Construction will be phased when possible to avoid or minimize noise impacts within habitat occupied by listed species, such as the Yuma clapper rail. Construction activities can occur throughout the year, with the exception of Production Well Pads OB1, OB2, and OB3 and their associated pipelines. If pre-construction surveys identify the preserve of clapper rails in any area where noise levels will exceed 60dBa, these well pads and pipelines will be constructed during the non-breeding season between August and February. A construction noise assessment will be conducted during final design to determine practicable mitigation measures to minimize noise impact to occupied clapper rail habitat. If practicable, the steam blow process will be scheduled to coincide with the non-breeding season of the Yuma clapper rail.

Bio-11: **Construction Standards.** The project facilities shall be constructed in accordance with County Building Code requirements, applicable to Seismic Zone 4. Well pad cellars shall be designed to prevent wildlife entry and entrapment.

Bio-12: **Construction Monitoring.** During construction of the power plant and associated well pads and transmission lines, a biologist approved by CDFG and USFWS will monitor construction activities near potential Yuma clapper rail habitat and areas of high burrowing-owl density along the transmission line. Noise monitoring within potential clapper rail habitat will also be conducted to verify compliance with any applicable noise restrictions.

Bio-13: **Best Management Practices**. Best Management Practices for pipeline construction will be implemented to ensure that movement of surface water from upland habitats into the drainages is not permanently disrupted. A monitoring program will be implemented to determine if measures have been adequate and to implement corrective measures, if necessary, to restore the area to pre-construction conditions.

Bio-14: **Light Shielding**. Light from the facility operations directly adjacent to wildlife habitat shall be shielded to prevent side casting of light toward wildlife habitat.

Bio-15: **Revegetation.** Temporary construction disturbance areas will be allowed to naturally revegetate with pre-disturbance native species. Grades and soil surfaces will be maintained to support this type of natural revegetation. Exotic species will be precluded from becoming established through implementation of a three-year post-construction monitoring program. Topsoil will be stockpiled for later redistribution onto temporary disturbed areas.

Bio-16: **Wildlife Monitoring.** The Applicant shall participate in a joint monitoring program with Refuge personnel to assess project-related impacts to wildlife.

Bio-17: **Construction Monitoring.** If a burrowing owl nest is identified on the project site during pre-construction surveys, construction work within 150 feet will be delayed until fledglings have left the nest.

Bio-18: **Occupied Burrowing Owl Burrows.** Occupied burrowing owl burrows will not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist verifies through non-invasive methods that either: (1) the birds have not begun egg-laying and incubation; or (2) that juveniles from occupied burrows are foraging independently and are capable of independent survival. – If construction activities are completed during the breeding season (March through July), a biological monitor approved by CDFG and USFWS must be onsite. If practicable, the steam blow process will be scheduled to coincide with the non-breeding season of the burrowing owl.

Bio-19: **Burrowing Owl Education Program.** Workers will be responsible for attending an education program related to the identification of burrowing owls and their habitat. Workers will be instructed to report all observations of burrowing owls, whether alive, injured, or dead. Workers will be instructed to exercise care when operating in areas inhabited by burrowing owls to avoid injuring them. Workers will not be permitted to collapse or fill burrows.

Bio-20: **Burrowing Owl Pre-construction Survey.** The Applicant will notify the Project Biologist prior to ground disturbing activities in burrowing owl habitat. The biologist will survey the area, determine if active burrows are within the work-site and collapse burrows if necessary. The procedures for surveying and installing passive relocation vents will be consistent with protocols currently approved by CDFG.

Bio-21: **Trench Covers.** To prevent entrapment of wildlife species during the construction phase of the project, all excavated, steep-walled holes or trenches more than 2 feet deep will either be covered at the close of each working day by plywood or provided with one or more escape ramps constructed of earth fill or wooden planks. The ramps will be located at no greater than 1,000-foot intervals and will be sloped less than 45 degrees. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals. In the case of trapped animals, escape ramps or structures will be installed immediately to allow the animal(s) to escape, or USFWS should be contacted for advice.

Bio-22: **Trench Inspection.** Trenches will be inspected for entrapped wildlife each morning prior to onset of construction. Before such holes or trenches are filled, they will be thoroughly inspected for entrapped animals. Any animals so discovered will be allowed to escape voluntarily, without harassment, before construction activities resume, or removed from the trench or hole by a qualified biologist and allowed to escape unimpeded.

Bio-23: Bird Flight Diverters. Bird diverters will be installed to help minimize bird mortality from the construction of the proposed transmission lines. In locations where the number of birds flying perpendicular to the proposed line exceeded 30 individuals, bird diverters will be installed (Figure 5.5-3). These locations are as follows: OBFLY1, 02, 06, 09, 10, 14, and 17 (Figures 5.5-1A through 5.5-1E). The bird diverters will be maintained and replaced as needed.

Bio-24: Compensation Land Acquisition. The Applicant is evaluating areas near the project site to mitigate project impacts to Yuma clapper rail and wetland areas. Mitigation for impacts to about 0.05 acres of Yuma clapper rail habitat may include enhancement of an existing wetland potentially used by clapper rail within the project vicinity at a mitigation ratio determined through the wetlands permit process by the Corps. Ideally, a suitable mitigation site would be a privately owned parcel directly adjacent to public lands being managed for their biological resources, where wetlands creation or enhancement can be conducted to mitigate the proposed loss of wetland and sensitive species resources at a mitigation ratio of 2:1 for a total of approximately 0.8 acre of habitat. Compensation for permanent impacts to sensitive species habitat will follow guidance provided by the wildlife agencies. Post-construction surveys will be conducted to determine the actual areas of habitat impacts compared to pre-construction conditions. These acreages will be used to calculate the actual compensation acreages to be used for the project. Compensation will consist of the creation and preservation of habitat for Yuma clapper rail and jurisdictional wetlands.

The standard USFWS and CDFG compensation ratios are:

- One acre of compensation land for each acre of permanent disturbance of habitats
- One acre of compensation land for each acre of temporary disturbance of habitats.

The Applicant would acquire the appropriate offsite acreage either as a conservation easement or in fee title, deed it to an acceptable land manager (e.g., CDFG, Friends of the Desert, or other land trust entities), and provide the funds for enhancement of the land (typically fencing or clean-up) and an endowment. The endowment would be used to meet the expense of managing the land. The Applicant would obtain approval from USFWS and CDFG before the easement or fee title is purchased because the land must be consistent with the regional conservation strategy and must provide habitat for the species impacted by the project.

5.5.6 Applicable Laws, Ordinances, Regulations, and Standards

Applicable biological resources LORS are summarized in Table 5.5-1 and described below. Agency contacts are provided in Table 5.5-1B.

5.5.6.1 Federal Authorities and Administering Agencies

National Environmental Policy Act (NEPA); 42 USC Section 4321 *et seq*. This Act requires analysis of the environmental effects of federal actions. The administering agency for the above authority for the SSU6 Project will be the BLM. The SSU6 facility will comply with this Act through coordination with the BLM.

Endangered Species Act of 1973; 16 USC Section 1531 *et seq*.; 50 CFR Parts 17 and 222. The Federal Endangered Species Act (ESA) and implementing regulations include provisions for the protection and management of federally listed threatened or endangered plants and animals and their designated critical habitats. Section 7 of the ESA requires federal agency consultation with the USFWS and/or National Marine Fisheries Service (NMFS) and issuance of a permit to take threatened or endangered species during lawful project activities. The administering agency for the above authority is the USFWS for terrestrial, avian, and some aquatic species, and the NMFS for anadromous species. The SSU6 Project will comply with this act through coordination with the ACOE as lead federal agency.

Fish and Wildlife Coordination Act; 48 Stat. 401, amended; 16 USC Section 661 *et seq*. This Act requires federal agencies to coordinate federal actions with the USFWS to conserve fish and wildlife resources. The administering agency for the above authority is the USFWS. The SSU6 facility will comply with the Act through NEPA and ESA coordination with the ACOE and through implementation of the Stipulation Conditions.

Clean Water Act of 1977; 33 USC Section 404. Under Section 404 of the federal Clean Water Act, the U.S. Army Corps of Engineers (Corps) has authority to regulate discharges of dredge or fill material into waters of the United States, including wetlands. The SSU6 facility will comply with this requirement and has submitted for approval from the Corps prior to the start of construction.

Clean Water Act of 1977; 33 USC Section 401. This section of the Clean Water Act requires a state-issued Water Quality Certification for all projects regulated under Section 404 and Section 401. In California, the Colorado River Basin Regional Water Quality Control Board issues Water Quality Certifications with jurisdiction over the project area. The SSU6 facility will comply with this requirement and obtain the Certification as part of the CWA Section 404 and 401 permit process.

Migratory Bird Treaty Act; 16 USC Sections 703-711; 50 CFR Subchapter B. The Act includes provisions for protection of migratory birds, including the non-permitted take of migratory birds. The administering agencies for the above authority are the USFWS and CDFG. The Applicant will develop and implement a BRMIMP to address the protection and enhancement of biological resources, including birds protected under the Migratory Bird Treaty Act. The BRMIMP will be finalized prior to the start of construction.

5.5.6.2 State Authorities and Administering Agencies

California Environmental Quality Act (CEQA); Public Resources Code Sections 21000 *et seq*. The Act provides for protection of the environment. The administering agency for the SSU6 Project is the CEC.

California Species Preservation Act 1970; California Fish and Game Code Sections 900 –903. This Act includes provisions for the protection and enhancement of the birds, mammals, fish, amphibians, and reptiles of California. The administering agency for the above authority is the CDFG. The SSU6 facility will develop and implement a BRMIMP to address the protection and enhancement of biological resources. The BRMIMP will be finalized prior to the start of construction.

California Endangered Species Act of 1984, California Fish and Game Code Sections 2050-2098. The California Endangered Species Act (CESA) and implementing regulations includes provisions for the protection and management of plant and animals species listed as endangered or threatened, or designated as candidates for such listing. The Act includes a consultation requirement "to ensure that any action authorized by a state lead agency is not likely to jeopardize the continued existences of any endangered or threatened species…or result in the destruction or adverse modification of habitat essential to the continued existence of the species" (Section 2090). Plants of California declared to be endangered, threatened, or rare are listed at 14 CCR §670.2. Animals of California declared to be endangered or threatened are listed at 14 CCR §670.5.14 CCR §15000 *et seq.* Describes the types and extent of information required to evaluate the effects of a proposed project on biological resources of a project site. The administering agency for the above authority is CDFG. The SSU6 facility will develop and implement a BRMIMP to address the protection and enhancement of biological resources. The BRMIMP will be finalized prior to the start of construction.

California Fish and Game Code. The Fish and Game Code provides specific protection and listing for several types of biological resources. These include:

- Fully Protected species
- Streams, rivers, sloughs, and channels
- Significant Natural Areas, and
- Designated Ecological Reserves.

Fully Protected Species are listed in §3511 (Fully Protected birds), §4700 (Fully Protected mammals), §5050 (Fully Protected reptiles and amphibians), and §5515 (Fully Protected fishes). The Fish and Game Code of California prohibits the taking of species designated as Fully Protected.

Fish and Game Code Section 1600 requires a Streambed Alteration Agreement for any activity that may alter the bed and/or bank of a stream, river, or channel. Typical activities that require a Streambed Alteration Agreement include excavation or fill placed within a channel, vegetation clearing, structures for diversion of water, installation of culverts and bridge supports, cofferdams for construction dewatering, and bank reinforcement.

Fish and Game Code Section 1930 designates Significant Natural Areas. These areas include refuges, natural sloughs, riparian areas, and vernal pools and significant wildlife habitats. An inventory of Significant Natural Areas is maintained by the Department of Fish and Game Natural Heritage Division and is part of the CNDDB.

Fish and Game Code Section 1580 lists Designated Ecological Reserves. Designated Ecological Reserves are significant wildlife habitats to be preserved in natural condition for the general public to observe and study.

The administering agency for the Fish and Game Code is the CDFG. The SSU6 facility will comply with these requirements through the CEC process.

California Native Plant Protection Act of 1977; California Fish and Game Code Section 1900 *et seq*. The Act and its implementing regulations designates rare and endangered plants and provides specific protection measures for identified populations. The administering agency for the above authority is the CDFG. The SSU6 facility will comply with this requirement through the implementation of the BRMIMP.

Wetlands Resources Policy. This policy provides for the protection, preservation, restoration, enhancement, and expansion of wetland habitats in California, including vernal pools. The administering agencies for the above authority are the CDFG, the California Environmental Protection Agency (Cal/EPA), and the Colorado River Basin Regional Water Quality Control Board (CRBRWQCB). The SSU6 facility will comply with this requirement through the implementation of the BRMIMP.

California Public Resources Code Sections 25500 & 25527. These code sections prohibit the siting of facilities in certain areas of critical concern for biological resources, such as ecological preserves, wildlife refuges, estuaries, and unique or irreplaceable wildlife habitats of scientific or educational value, is prohibited. If there is no alternative, strict criteria are applied. The administering agency for the above authority is the CDFG. Demonstration of the adherence to the strict criteria for protection of biological resources, as noted above, will be included in the BRMIMP.

5.5.6.3 Local Authorities and Administering Agencies

Imperial County General Plan. Imperial County's General Plan strives to preserve the integrity, function, productivity, and long-term viability of environmentally sensitive habitats, and plant and animal species in Imperial County. Specific Biological Resource objectives within the Conservation and Open Space Element include Objective 2.1: conservation of wetlands, fresh water marshes, and riparian vegetation, Objective 2.2: protect significant fish, wildlife, plant species, and their habitats, Objective 2.3: protect unique, rare, and endangered plants and animals and their habitats, Objective 2.4: use the environmental impact report process to identify, conserve and enhance unique vegetation and wildlife resources, Objective 2.6: attempt to identify, reduce, and eliminate all forms of pollution which adversely impact vegetation and wildlife, Objective 2.7: discourage the use of wild native animals as pets, and Objective 2.8: adopt noise standards which protect sensitive noise receptors from adverse impacts. The administering agency for the above authority is the Imperial County Planning/Building Department. In addition, the BRMIMP will implement all mitigation measures intended to minimize impacts to biological resources.

5.5.6.4 Permits Required and Permit Schedule

The CEC is the lead agency for the proposed SSU6 Project. The Applicant, therefore, is not required to directly apply for applicable discretionary state and local permits. However, the CEC takes into consideration the state and local agency requirements and permits for the SSU6, and would therefore require the Applicant to demonstrate that the proposed project would comply

with the regulations and requirements. Permits are summarized in Table 5.5-2 and agency contacts for biology-related activities are provided in Table 5.5-3. Various local agency permits would be required, and the general schedule for obtaining permits or approvals, are discussed below.

Federal Permits and Approvals

NEPA Compliance: The SSU6 facility will comply with this act through coordination with the BLM.

ESA Compliance: The SSU6 facility will comply with this act through coordination between the FWS, BLM, and ACOE. The SSU6 facility will comply with this act through coordination with the ACOE as the lead federal agency in consultation with the USFWS under Section 7 of the ESA.

ACOE Section 404 Permit: The SSU6 facility will comply with this requirement and submit a 404 application to the ACOE.

Migratory Bird Treaty Act Compliance: The Applicant will develop and implement a BRMIMP to address the protection and enhancement of biological resources. Native vegetation clearing will be conducted during the non-breeding season. The BRMIMP will be finalized prior to the start of construction.

State Permits and Approvals

CESA Compliance: The Applicant will develop and implement a BRMIMP approved by the CEC to address the protection and enhancement of biological resources. The BRMIMP will be finalized prior to the start of construction.

1603 Streambed Alteration Agreement: The SSU6 facility will obtain this agreement through the CEC process.

Local Permits and Approvals

Imperial County General Plan Compliance: The BRMIMP will implement all mitigation measures intended to minimize impacts to biological resources.

5.5.6.5 Agencies and Agency Contacts

Table 5.5-3 lists the agencies contacted.

5.5.7 Alternatives

5.5.7.1 No Project Alternative

The No Project Alternative would result in no development of the proposed 185 MW SSU6 facility. Geothermal energy production would not occur and would be provided to California's restructured energy market. No potential impacts to biological resources would occur.

5.5.7.2 L-Line Interconnection Alternative

This alternative portion of the transmission-line route originates at the intersection of Bannister Road and Highway 86, and parallels Highway 86 until it intersects with the existing L-Line (Figure 3.10-2). The habitat west of the junction of Bannister Road and Highway 86 supports creosote bush scrub dominated by creosote bush (*Larrea tridentata*) and brittlebush (*Ambrosia dumosa*). Along Highway 86, the habitat consists of agriculture and residential on the east side, with creosote bush scrub on the west side. This portion of the route was not found to represent a significant shorebird flyway and impacts to locally migrating shorebirds are not expected. Burrowing owls were not observed along this route during the biological surveys. This alternative route may affect reduced areas of native habitat, and increased areas of developed and agricultural habitat that have minimal value to native plant and wildlife species compared to the proposed alternative. This route represents an acceptable alternative with respect to biological resources.

5.5.8 References

Bolster B.C. 1990. Five-year status report on the desert pupfish. California Department of Fish and Game Inland fisheries Division, Rancho Cordova. 12pp.

Brown, B.T., 1988. "Breeding Ecology of a Willow Flycatcher Population in Grand Canyon, Arizona." Western Birds 19(1):25-33.

Bradshaw, Dee. 2002. Personal Communication. Imperial Irrigation District.

California Department of Fish and Game. 2002. (Not yet Published) Desert Pupfish Survey Data for the Obsidian butte region, Salton Sea.

2001. State and Federal Endangered and Threatened Animals of California. The Resources Agency.

1991. Special Animals.

1990. Designated Endangered, Threatened or Rare Plants. The Resources Agency.

Cogswell, H.L. 1977. Water birds of California. University of California Press, Berkeley.

Conway, C.J., C. Sulzman, B.E. Raulson. 2002. Population trends, distribution, and monitoring protocols for the California Black Rail. AGFD Heritage Program IIPAM Grant 199010. January. Arizona Cooperative Fish and Wildlife Research Unit, University of Arizona, Tucson, AZ.

Edelman, W.R., and C.J. Conway, 1998. "Clapper Rail." In A. Poole and F. Gill eds. The Birds of North America. No. 340. 32 pp.

Ehrlich, Paul R., David S. Dobkin, and Darryl Wheye. 1988. *The Birder's Handbook.*

Garrett, K. and J. Dunn. 1981. Birds of southern California. Status and distribution. Los Angeles Audubon Society.

Hickman, J.C., ed. 1993. The Jepson Manual: Higher Plants of California. University of California Press, Berkeley.

Holland, R.F. 1986. Preliminary Descriptions of the Terrestrial Natural Communities of California. State of California, The Resources Agency.

King, D. 2002. Personal Communication. AMEC.

Johnsgard, Paul A., 1988. "Hawks, Eagles and Falcons of North America." Washington D. C.: Smithsonian Institution Press.

McCaskie, G. 1979. The fall migration. Southern Pacific Coast Region. American Birds 33(2):214.

McCaskie, G. 1989. The nesting season. Southern Pacific Coast Region. American birds 43(5):1368.

McCaskie, G. 1990. The nesting season. Southern Pacific Coast Region. American Birds 44(5):1186.

Molina, C. 2000. Breeding populations of gull-billed terns (*Sterna nilotica vanrossemi*) in southern California, 2000. November. Submitted to USFWS, Carlsbad.

Munz, P.A. 1974. A Flora of Southern California. University of California Press, Berkeley.

Radke, W.R. and M.F. Radke, 1993. Wildlife Inventory Plan, August.

Reiser, C. H., May 1994. "Rare Plants of San Diego County." Imperial Beach: Aquifer Press. 180 pp.

Remsen, V., 1978. "The Species of Special Concern List: An Annotated List of Declining or Vulnerable Birds in California." Western Field Ornithologist, Museum of Vertebrate Zoology, University of California, Berkeley.

Sibley, David Allen. 2001. *The Sibley Guide to Bird Life and Behavior.* Edited by Chris Elphick, John Dunning and David Allen Sibley.

Sibley, David Allen. 2000. *The Sibley Guide to Birds.* Simon and Shuster/ Fireside books. New York, NY.

Small, A, 1974. The Birds of California. MacMillan Publishing Co., New York, NY.

Smith, J.P. and K. Berg (eds.). 1988. Inventory of Rare and Endangered Vascular Plants of California. California Native Plant Society, Special Publication No. 1, 4th edition.

Stebbins, Robert C. 1985. *A Field Guide to Western Reptiles and Amphibians*. Second edition, Houghton Mifflin, New York, NY.

Tibor, D (ed.). 2001. Inventory of Rare and Endangered Vascular Plants of California. California Native Plant Society, Special Publication No. 1, 6th Edition.

Turner, F.B., J.C. Rorabaugh, E.C. Wilson, and M.C. Jorgenson. 1980. *A survey of the occurrence and abundance of the flat-tailed horned lizard (Phrynosoma mcallii) in California.*

United States Fish and Wildlife Service. 1991. Endangered and Threatened Wildlife and Plants: Animal Candidate Review for Listing as Endangered or Threatened Species; Proposed Rule. Federal Register 56(255): 58804-58836. November 21, 1991.

1990. Endangered and Threatened Wildlife and Plants: Review of Plant Taxa for Listing as Endangered or Threatened Species; Notice of Review. Federal Register, 55(35): 6184-6229. February 21, 1990.

1997. Salton Sea National Wildlife Refuge. Watchable Wildlife Pamphlet.

1989. Endangered and Threatened Wildlife and Plants: Review of Vertebrate Wildlife; Notice of Review. Federal Register, 50(17): 554-579. January 6, 1989.

Unitt, P., 1984. "The Birds of San Diego County." Memoir 13, San Diego Society of Natural History. 276 pp.

Unitt, P., 1987. "*Epidonax traillii extimus*: An Endangered Species." Western Birds 18(3): 137-62.

Westec Services, Inc., December 1981. "Final Salton Sea Anomaly Master EIR and Magma Power Plant #3 EIR." State Clearinghouse #80102409.

Wilbur, S.R. 1987. The birds of Baja California. University of California Press, Berkeley.

Wiggins, I. L. 1980. *Flora of Baja California*. Stanford University Press.

Zarn, M. 1974. Technical note: habitat management series for unique or endangered species: Report no. 1; burrowing owl (*Speleotyto cunicularia hypugaea*). Bureau of Land Management, U.S. Department of the Interior. Denver Service Center, Denver Colorado. 25pp.

Table 5.5-1A
SURVEY DATES AND CONDITIONS FOR THE SSU6 STUDY AREA

Date	Observer	Temperature (ºF)	Wind	Cloud Cover
9/22/94	KP, PU	90°	0	10%
10/4/94	KP	No Data	No Data	No Data
10/17/94	KP	No Data	No Data	No Data
11/1/94	DK	No Data	No Data	No Data
11/14/94	KP	No Data	No Data	No Data
11/15/94	KP	No Data	No Data	No Data
12/16/99	PU, GG, JR, TS	55-60°	1-2 mph	Thin
12/17/99	JR, TS	50°	0 mph	Clear
1/7/00	JR, BL, PR	55°	1-5 mph	Scattered rain
1/31/00	JR, BL	65°	5-10 mph	Cloudy
3/24/00	JR, BL	72°	Calm	Partly cloudy
3/31/00	TS, TW	68°	Very strong	Clear
4/14/00	PR, JR	70°	Extremely windy	Mostly sunny
4/28/00	PR, JR	80°	0 mph	Haze
3/5/01	TW, HG	60-75°	1-6 mph	Partly cloudy
4/13/01	TW, HG	55°	0-3 mph	Clear
5/3/01*	TW, HG, PR	65-75°	7-15 mph	Clear
5/4/01*	PR, JR, TW, HG	70°	Calm	Clear
5/17/01	HG, PR, TW, SW	75-78°	Calm	Clear
6/7/01	TW, HG, SW	75°	0-5 mph	Clear
6/8/01	TW, HG, SW	75°	0-5 mph	Clear
6/28/01	TW, SW	65°	0-3 mph	Clear
10/17/01	PR, HG	60-90°	0-2 mph	Partly cloudy
11/15/01	PR, HG	50-65°	0-5 mph	Clear
11/16/01	HG, PR	50°	Calm	Clear
11/20/01	HG, PR	48-68°	0-5 mph	Clear
11/21/01	HG, PR	40-48°	0-2 mph	Clear
11/27/01	PR, HG	45-50°	15-40 mph	Clear
11/28/01	HG, PR	40°	Calm	Clear
12/13/01	PR, HG	40-65°	0-2 mph	Clear
12/14/01	HG, PR	40°	Calm	Partly cloudy
1/10/02	JR, PR	48-68°	0-10 mph	Clear
1/11/02	JR, PR	48-68°	5-10 mph	Clear
2/5/02	HG, BL, PR	43-70°	0-15 mph	Clear
2/6/02	PR, HG, BL	37-52°	0-5 mph	Clear
4/4/02*	JR, HG, RL	58-88º	0-1 mph	Clear
4/26/02	PR	70º	10-20 mph	Partly-mostly cldy
5/14/02	PR	85º	Calm	Hazy/clear
5/23/02	PR	60-76º	0-5 mph	Clear
5/31/02	PR, LH	78-100º	0-5 mph	Partly cloudy
6/5/02	PR. LH	85º	Calm	Hazy
6/13/02	PR, LH	72º	0-3 mph	Hazy
6/14/02	PR, LH	75º	0-2 mph	Hazy

Table 5.5-1A
SURVEY DATES AND CONDITIONS FOR THE SSU6 STUDY AREA

Initials	Observer Name	Qualifications
BL	Brian Lohstroh	B.S. Ecology, Behavior & Evolution, 5 years of experience
DK	David King	B.S. Biology, 14 years of experience
GG	Geoff Gray	M.S. Biology, 6 years of experience
HG	Heather Green	B.S. Environmental Studies, 4 years of experience
JR	Jim Rocks	M.S. Biological Sciences, 5 years of experience
KP	Kris Preston	B.S. Biology, 6 years of experience
LH	Lincoln Hulse	B.S. Biology, 3 years of experience
PR	Phil Richards	B.S. Biological Sciences, 3 years of experience
PU	Phil Unitt	B.S. Zoology, 25 years of experience
RL	Rebecca Loomis	B.S. Environmental Biology, 6 years of experience
TS	Tom Strong	Ph.D. Biology, 15 years of experience
TW	Theresa Weber	B.A. Biology, 2 years of experience

*focused plant surveys conducted

Table 5.5-1B
SENSITIVE PLANT SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE SALTON SEA UNIT 6 STUDY AREA

Common Name	Scientific Name	Federal Status	State Status	Observed
Peirson's milk-vetch	*Astragalus magdalenae* var. *peirsonii*	Threatened	None	No

Table 5.5-1C
SENSITIVE WILDLIFE SPECIES WITH THE POTENTIAL TO OCCUR WITHIN THE SALTON SEA UNIT 6 STUDY AREA

Common Name	Scientific Name	Federal Status	State Status	Observed
American white pelican	*Pelecanus erythrorhynchos*	None	Species of Special Concern	Yes
Brown pelican	*Pelecanus occidentalis*	Endangered	Endangered	Yes
Double-crested cormorant	*Phalacrocorax auritus*	None	Species of Special Concern	Yes
Least bittern	*Ixobrychus exilis*	None	Species of Special Concern	No
White-faced ibis	*Plegadis chihi*	None	Species of Special Concern	Yes
Cooper's hawk	*Accipiter cooperi*	None	Species of Special Concern	No
Sharp-shinned hawk	*Accipiter striatus*	None	Species of Special Concern	No
Prairie falcon	*Falco mexicanus*	None	Species of Special Concern	Yes
Northern harrier	*Circus cyaneus*	None	Species of Special Concern	Yes
Ferruginous hawk	*Buteo regalis*	None	Species of Special Concern	Yes
Merlin	*Falco columbarius*	None	Species of Special Concern	Yes
Osprey	*Pandion haliaetus*	None	Species of Special Concern	Yes
Yuma clapper rail	*Rallus longirostris yumanensis*	Endangered	Threatened	Yes
California Black rail	*Laterallus jamaicensis coturniculus*	None	Threatened	No
Mountain plover	*Charadrius montanus*	Proposed Threatened	Species of Special Concern	No
Long-billed curlew	*Numenius americanus*	None	Species of Special Concern	Yes
Black tern	*Chlidonias niger*	None	Species of Special Concern	Yes
California gull	*Larus californicus*	None	Species of Special Concern	Yes
Laughing gull	*Larus atricilla*	None	Species of Special Concern	No
Black skimmer	*Rynchops niger*	None	Species of Special Concern	No
Caspian tern	*Sterna caspia*	None	Species of Special Concern	No
Elegant tern	*Sterna elegans*	None	Species of Special Concern	No
Van Rossem's gull-billed tern	*Sterna nilotica*	None	Species of Special Concern	Yes
Burrowing owl	*Athene cunicularia*	None	Species of Special Concern	Yes
Southwestern willow flycatcher	*Empidonax traillii extimus*	None	Endangered	No
Loggerhead shrike	*Lanius ludovicianus*	None	Species of Special Concern	No
Least Bell's vireo	*Vireo bellii pusillus*	Endangered	Endangered	No
Horned lark	*Eremophila alpestris actia*	None	Species of Special Concern	Yes
Yellow warbler	*Dendroica petechia*	None	Species of Special Concern	No
Yellow-breasted chat	*Icteria virens*	None	Species of Special Concern	No
LeConte's Thrasher	*Toxostoma lecontei*	None	Species of Special Concern	No
Flat-tailed horned lizard	*Phrynosoma mcallii*	Proposed Endangered	Species of Special Concern	No
Desert pupfish	Cyprinodon macularius	Endangered	Endangered	No

Table 5.5-1D
ESTIMATED HABITAT IMPACTED BY PROJECT COMPONENT IN ACRES*

Project Component	Agriculture	Tamarisk scrub	Common reed	Typha/Arrowweed scrub	Desert sink scrub	Creosote bush scrub	Freshwater Marsh	Developed/ disturbed	Road/ Ag. Ditch	Totals
Plant Site	80	0	0	0	0	0	0	0	0	**80.00**
Production Wells	16.8	0	0	0	2.0	0	0	4.8	0	**23.60**
Injection Wells	14.5	0	0	0	0	0	0	0	0	**14.50**
Well Pipelines	140	0.33	0	0	0.02	0	0.08	0	0	**140.43**
Water Supply Line	0.7	0	0	0	0	0	0	0	0	**0.7**
L-Line Interconnection	71.3	0	0	0	0.5	14.2	0	1.5	0	**87.5**
IID Midway Interconnection	79.0	0	0	0	0	0	0	7.3	0	**86.3**
Pull Site Impact	27.9	0	0	0	0	2.3	0	1.7	0	**31.9**
T-Line Staging Areas and Access Roads[1]	0	0	0	0	0	3.6	0	38	0	**38**
Totals	**430.2**	**0.33**	**0**	**0**	**2.52**	**20.1**	**0.08**	**53.3**	**0**	**506.53**

U.. All acreages approximate

U.. Implementation of the transmission lines includes the following assumptions:

8 acres of impact would occur in disturbed habitat for access roads

30 acres of impact would occur in disturbed habitat for staging areas

Table 5.5-1E
WELL PAD DEVELOPMENT SOUND LEVELS

Activity	Sound Pressure Level at 100 feet*	Location of the 60 dBA L_{eq} Noise Contour
Drill Site Preparation	79 dBA	890 feet
Well Drilling	77 dBA	700 feet
Well Cleanout	75 dBA	560 feet
Flow Testing	79 dBA	890 feet

SOURCE: Final Salton Sea Anomaly Master Environmental Impact Report, December 1981.

Table 5.5-2
SUMMARY OF LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

Jurisdiction	LORS	Requirements	Compliance Discussion/Activities	Administering Agency	Agency Contact
5.5 – Biological Resources					
Federal					
	National Environmental Policy Act; 42 USC §4321 et seq.	This Act requires analysis of the environmental effects of federal actions.	Section 5.5.1.	Bureau of Land Management	
	Endangered Species Act of 1973	Protection and management of federally listed threatened or endangered plants and animals and their designated critical habitats. Section 7 of the ESA requires federal agency consultation with the USFWS and/or NMFS and a permit to take threatened or endangered species during lawful project activities. The administering agency for the above authority is the USFWS for terrestrial, avian, and some aquatic species, and the NMFS for anadromous species. The SSU6 Project will comply with this act through coordination with the ACOE as lead federal agency.	Section 5.5.1.	U.S. Fish and Wildlife Service	1

Table 5.5-2 (continued)
SUMMARY OF LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

Jurisdiction	LORS	Requirements	Compliance Discussion/Activities	Administering Agency	Agency Contact
Clean Water Act of 1977					
	Section 404	U.S. Army Corps of Engineers has authority to regulate discharges of dredge or fill material into Waters of the U.S., including wetlands.	Section 5.5.1. The SSU6 Facility will comply and submit approval from ACOE prior to the start of construction.	U.S. ACOE	2
	Section 401	Requires a state-issued Water Quality Certification for all projects regulated under Section 404.	Section 5.5.1. The SSU6 Facility will comply and submit Certification prior to the start of construction.	RWQCB	4
	Migratory Bird Treaty Act (16 USC §§703-711)	Provisions for protection of migratory birds, including the non-permitted take of migratory birds.	Section 5.5.1. The SSU6 Facility will comply through implementation of the BRMIMP.	USFWS and California Department of Fish and Game	1,3
State					
	California Environmental Quality Act, Public Resources Code § 2100 et seq.	Protection of the environment.	Section 5.5.	CEC	5
	California Endangered Species Act of 1984	Protection and management of plant and animals species listed as endangered or threatened, or designated as candidates for such listing	Section 5.5.2. The SSU6 Facility will comply through implementation of the BRMIMP.	CDFG	3

Table 5.5-2 (continued)
SUMMARY OF LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

Jurisdiction	LORS	Requirements	Compliance Discussion/Activities	Administering Agency	Agency Contact
	Fish and Game Code.	Provides specific protection and listing for several types of biological resources. These include: fully protected species; streams, rivers, sloughs, and channels; significant natural areas; and Designated Ecological Reserves.	Section 5.5.2. The SSU6 Facility will comply through implementation of the BRMIMP.	CDFG	3
	Section 1600	Requires a Streambed Alteration Agreement for any activity that may alter the bed and/or bank of a stream, river, or channel.	Section 5.5.2. The SSU6 Facility will comply through implementation of the BRMIMP.	CDFG	3
	Section 1930	Designates Significant Natural Areas. These areas include refuges, natural sloughs, riparian areas, and vernal pools and significant wildlife habitats	Section 5.5.2. The SSU6 Facility will comply through implementation of the BRMIMP.	CDFG	3
	Section 1580	Designates Ecological Reserves. Designated Ecological Reserves are significant wildlife habitats to be preserved in natural condition	Section 5.5.2. The SSU6 Facility will comply through implementation of the BRMIMP.	CDFG	3
	Native Plant Protection Act of 1977; Section 1900 et seq. of the Fish and Game Code	Designates rare and endangered plants and provides specific protection measures for identified populations	Section 5.5.2. The SSU6 Facility will comply through implementation of the BRMIMP.	CDFG	3

Table 5.5-2 (continued)
SUMMARY OF LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

Jurisdiction	LORS	Requirements	Compliance Discussion/Activities	Administering Agency	Agency Contact
	Wetlands Resources Policy	The protection, preservation, restoration, enhancement, and expansion of wetland habitats in California, including vernal pools.	Section 5.5.2. The SSU6 Facility will comply through implementation of the BRMIMP.	CDFG, Cal/EPA, and RWQCB.	3, 4
	Public Resource Code Sections 25500 & 25527	Prohibits the siting of facilities in certain areas of critical concern for biological resources, such as ecological preserves, wildlife refuges, estuaries, and unique or irreplaceable wildlife habitats of scientific or educational value, are prohibited. If there is no alternative, strict criteria are applied.	Section 5.5.2. Demonstration of adherence to the strict criteria for protection of biological resources will be included in the BRMIMP.	CDFG	3
Local					
Imperial County General Plan, Preservation of Biological Resources					
	Objective 2.1	Conserve wetlands, fresh water marshes, and riparian vegetation.	The SSU6 Facility will comply through implementation of the BRMIMP.	Imperial County Planning/Building Department	6
	Objective 2.2	Protect significant fish, wildlife, plant species, and their habitats	The SSU6 Facility will comply through implementation of the BRMIMP.	Imperial County Planning/Building Department	6
	Objective 2.3	Protect unique, rare, and endangered plants and animals and their habitats.	The SSU6 Facility will comply through implementation of the BRMIMP.	Imperial County Planning/Building Department	6

Table 5.5-2 (continued)
SUMMARY OF LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

Jurisdiction	LORS	Requirements	Compliance Discussion/Activities	Administering Agency	Agency Contact
	Objective 2.4	Use the environmental impact report process to identify, conserve and enhance unique vegetation and wildlife resources.	The SSU6 Facility will comply through implementation of the BRMIMP.	Imperial County Planning/Building Department	6
	Objective 2.6	Attempt to identify, reduce, and eliminate all forms of pollution which adversely impact vegetation and wildlife.	The SSU6 Facility will comply through implementation of the BRMIMP.	Imperial County Planning/Building Department	6
	Objective 2.7	Discourage the use of wild native animals as pets.	The SSU6 Facility will comply through implementation of the BRMIMP.	Imperial County Planning/Building Department	6
	Objective 2.8	Adopt noise standards, which protect sensitive noise receptors from adverse impacts.	The SSU6 Facility will comply through implementation of the BRMIMP.	Imperial County Planning/Building Department	6

Table 5.5-3
AGENCY CONTACT LIST FOR
LAWS, ORDINANCES, REGULATIONS, AND STANDARDS

FEDERAL					
1	U.S. Fish and Wildlife Service 2730 Loker Avenue West, Carlsbad, CA 92008 Carol Roberts (760) 431-9440 Fax: (760) 431-9624	**2**	U.S. Army Corps of Engineers Los Angeles District P.O. Box 2711 Los Angeles, CA 90053-2325 Office Location: 911 Wilshire Blvd Los Angeles, CA 90017 Col. Richard G. Thompson (213) 452-5300		
STATE					
3	California Department of Fish and Game Region 6 4775 Bird Farm Road Chino Hills, CA 91709 Ms. Kim Nicols (909) 597-9823 Fax: (909) 597-0067 (909) 606-2409	**4**	California Department of Fish and Game Long Beach Office 330 Golden Shore, Suite 250 Long Beach CA 90802 Public Information: (562) 590-5126 Fax: (562) 590-5192 Curt Taucher, Regional Manager: (562) 590-5126 Terri Thompson, Secretary	**5**	Colorado River Basin Regional Water Quality Control Board 73-720 Fred Waring Drive Suite 100 Palm Desert, CA 92260 (760) 346-7491 Fax: (760) 341-6820 Compliance Assurance Supervisor - Igbinedion, Chris (760) 776-8968
6	California Energy Commission 1516 Ninth Street, MS-15 Sacramento, CA 95814 Paul Richins, Jr. Energy Facility Licensing Program Manager (916) 654-4074 E-mail: prichins@energy.state.ca.us				
LOCAL					
7	Planning/Building Department County of Imperial 939 Main Street El Centro, CA 92243-2875 Jurg Heuberger, AICP Planning Director (760) 339-4236 Fax: (760) 353-8338 email: jurgh@icoe.K!@.ca.us				

Photo 1: Typical creosote bush scrub habitat is visible in this photograph. Also apparent is the sparseness of the vegetation, as well as the soil characteristics. Steam plumes from the geothermal power plants associated with the Salton Sea are visible in the background.

Photo 2: View of tamarisk scrub habitat associated with an agricultural drainage ditch.

Photo 3: View of typical agricultural habitat near the plant site.

Photo 4: Oblique aerial view facing northwest of the Obsidian Butte region. The proposed plant site is visible as the brown agricultural field at bottom, center.

Photo 5: View of tamarisk scrub habitat at the Lack Road crossing of the New River.

Photo 6: Typical freshwater marsh habitat associated with agricultural drains along the proposed transmission lines.

Photo 7: Typical fresh water marsh habitat associated with agricultural drains along the proposed transmission lines.

Photo 8: A small patch of desert sink scrub found at the OB2 well pad site.

Photo 9: View of the proposed well pad site OB3 on a graded area on Obsidian Butte.

Photo 10: View of agricultural field where the plant site and well pad site OB4 would be located.

Photo 11: View of agricultural field where well pad site OB5 would be located.

Photo 12: View of agricultural field where well pad site OBI2 would be located.

Photo 13: View of agricultural field where well pad site OBI3 would be located.

Photo 14: Typical creosote bush scrub habitat found along the proposed transmission line route.

Photo 15: Typical creosote bush scrub habitat found along the proposed transmission line route.

Photo 16: View of a large wash found along the proposed transmission line route. Steam plumes from the geothermal power plants associated with the Salton Sea are visible in the background.

Photo 17: View of a large wash found along the proposed transmission line route. Steam plumes from the geothermal power plants associated with the Salton Sea are visible in the background.

Photo 18: View of a kit fox den site found along the proposed transmission line route. Note the presence of kit fox scat.

Photo 19: Large canid den site found in the wash near the proposed transmission line route.

Photo 20: Evidence of off-highway vehicle disturbance found where the proposed transmission line route connects with the existing "L" line.

Photo 21: A large, bank-reinforcing berm found along the proposed transmission line route.

Photo 22: A burrowing owl found along the proposed transmission line route.

Photo 23: A detail of the undisturbed soils present along the proposed transmission line route.

Photo 24: A detail of the soils present along the proposed transmission line route. Evidence of disturbance is visible in this photograph.

Photo 25: A burrowing owl found at its burrow entrance along an agricultural drainage ditch.

Photo 26: A typical burrowing owl burrow found along an agricultural drainage ditch.